

**A STUDY TO EVALUATE THE EFFECTIVENESS  
OF JACOBSON PROGRESSIVE MUSCLE RELAXATION TECHNIQUES  
ON BLOOD PRESSURE AND STRESS AMONG ELDERLY PEOPLE  
RESIDING IN SELECTED OLD AGE HOMES AT TRICHY**

**By  
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**A DISSERTATION SUBMITTED TO  
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## ABSTRACT

The study was aimed to assess the effectiveness of Jacobson Progressive Muscle Relaxation Techniques on blood pressure and stress among elderly people residing in selected old age homes at Trichy. The study was an evaluative approach. This study made use of Quasi experimental non equivalent pretest and post test control group design. Conceptual frame work adopted in the study was the Wiedenbach's helping art of clinical nursing theory (1969). A total of 60 samples out of which 30 samples for experimental group and 30 for control group were selected by purposive sampling technique who fulfilled the inclusion criteria. Pre test was done for both experimental and control group. Stress was assessed by Perceived Stress Scale and blood pressure was checked by mercury Sphygmomanometer for both groups. Jacobson Progressive muscle relaxation techniques were made to practice it under the supervision and guidance of the investigator for 20 minutes in the morning for a period of 30 days. After that post test was conducted for experimental and control group using the same scales. Descriptive and inferential statistics were used to analyze the findings of the study.

The independent 't' value of blood pressure and stress was significant at  $P < 0.05$  level. There was a correlation found between the post test level of blood pressure and stress ( $r = 0.4$ ). The finding of the study shows that Jacobson Progressive muscle relaxation techniques help to reduce the blood pressure and stress among elderly people.

**Keywords:** Jacobson progressive muscle relaxation technique, blood pressure, stress, old age people.

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## **CHAPTER – I**

### **INTRODUCTION**

*Give your stress wings and let it fly away”  
“Ageing is neither a disease nor disability”*

-Terri Guillemets

Getting Older can bring health challenges. By being aware of these common chronic conditions, you can take steps to stave off disease as you age.

### **BACKGROUND OF THE STUDY**

Eugene J. Albrecht ., (2000) states that, a man's life is normally divided into five main stages namely infancy, childhood, adolescence, adulthood and old age. In each of these stages an individual has to find himself in different situations and face different problems. Old age consists of ages nearing or surpassing the life expectancy of human beings, and thus the end of the human life cycle.

Aging affects the physiological functioning of all body systems. In the cardiovascular system, as blood vessels get thickened the ability of heart to pump blood decreases. As elasticity of the lung decreases, lungs ability to utilize oxygen reduces. Aging also decreases muscle tone and bone strength. Endocrine function decreases with age as hormone receptors are less effective. Brain function declines, including short term memory loss and intellectual problems.

Geriatrics refer to medical care for the elderly, an age group that is not easy to define precisely. Older people is sometimes preferred but is equally imprecise. High blood pressure (BP) is ranked as the third most important risk factor for attributable burden of disease in south Asia.

To emphasize the old age problem WHO celebrated world health Day 2012 with “good health adds life to years as slogan and 2013 theme is focused on Hypertension with the slogan “control your blood pressure. Old people often have limited regenerative abilities and are more susceptible to disease, syndromes, and sickness than younger adults. The organic process of ageing is called senescence, the medical study of the aging process is gerontology and the study of diseases that afflict the elderly is geriatrics.

Stress occurs when individuals perceive that they cannot adequately cope with the demands being made on them or with the threats to their well-being. Stress can cause hypertension through repeated blood pressure elevations as well as by stimulation of the nervous system to produce large amounts of vasoconstriction hormones that increase blood pressure.

Individuals over the age of 60 may feel dizzy, fall or pass out when they stand suddenly due to blood pressure that is suddenly too low. This condition, known as postural or orthostatic hypotension, poses a danger of fractures and other serious injury. This is especially a concern in frail older people who often suffer as well from thinning bones (osteoporosis). Therefore, many doctors now set a target of 140/90 mmHg, 150/80 mmHg, or 150/85 mmHg for older individuals.

Hypertension in old age should not be considered a ‘normal part of aging’. Approximately 30-40% of all people over 65 have high blood pressure. Blood pressure control also increases life expectancy and the quality of life among elderly people. In the case of elderly patients, the physician will aim to achieve a gradual reduction in blood pressure, and will especially keep an eye on how the patient feels in general and on possible side effects.

The past few years have witnessed an increased interest in non-pharmacological treatment approaches to Hypertension. The management of

mild elevations of BP can be achieved by non-pharmacological measures. In traditional or modified form, relaxation training had been the focus of more clinical and research attention, for a long period of time. Relaxation strategies have been used for centuries as integral components of major philosophical theological and therapeutic traditions. Their current use, stems primarily from the work of Edmund Jacobson.

Benson describes the scientific benefits of relaxation, explaining the regular practice of the relaxation response can be an effective treatment for a wide range of stressed related disorders. Relaxation is essentially opposite reaction to the “fight or flight” response.

Victor Emanuel.,(2013) describes there are several types of relaxation therapies such as stretch release relaxation (SRR), Jacobson’s progressive muscle relaxation (JPMR), cognitive imagery relaxation (COG), and some types of meditations. Here, the JPMR technique is used because of its better reported results, its simplicity in performance and easy independent practice at home. The main idea of initiating the relaxation response in this way is to take control of the voluntary muscles through creation of tension in them, followed by forcing them into a state of relaxation. A number of possibilities for the implementation of complementary therapies in an evidence-based medicine environment.

Jacobson (1930) who conducted the first psycho physiological study of relaxation. He found that when subjects deeply relaxed their skeletal muscles, they would not show a normal startle response to a loud noise. Later Jacobson developed a technique called ‘Progressive Relaxation’ which was designed to bring about a deep state of muscle relaxation. He believed that such a state could reduce arousal in both the central nervous system and the autonomic

nervous system and as a result could restore or promote psychological and physical well-being.

There are fifteen muscle groups involved in progressive muscle relaxation technique. They are dominant hand and forearm, Dominant upper arm, Non dominant hand and forearm, Non dominant upper arm, Forehead, Upper cheeks and nose, Lower face, Neck, Chest, shoulders, and upper back, Dominant upper back, Dominant calf, Dominant foot, Non dominant upper leg, Non dominant calf and Non dominant foot. Practice it for 20 minutes per day. Practice at regular time. On awakening or before retiring, or before meals are generally best times, a consistent, daily relaxation routine will increase the likelihood of generalization effects.

De Berry., (2007) explains practice of progressive muscle relaxation (PMR) is the simplest and effective method to decrease muscle tension, reduce the stress and to lower blood pressure. In the light of exposure to Hypertension patients, the investigator recognized that most of the Hypertension patients are stressed especially the older people and they need some relaxation technique to calm their mind, hence, the present study aimed at reducing stress and blood pressure among elderly people in selected old age homes by using Jacobson's progressive muscle relaxation technique.

## **NEED FOR THE STUDY**

Old age and stress go in hand. In modern usage stress refers to being under a great deal of emotional, mental, and social pressure for prolonged period of time. Stress is a major issue for senior people and most of the health problems originate from stress. When stress occurs, the hypothalamus signals the adrenal glands to produce more of the hormones adrenaline and cortisol, and release them into blood stream. These hormones temporarily increase your

blood pressure by causing your heart to beat faster and your blood vessels to narrow.

Hypertension is becoming an important public health problem worldwide. It exhibits iceberg phenomena where unknown morbidity exceeds the known morbidity. Hypertension is threat to life at all ages and in both sexes. The prevalence of hypertension is rapidly increasing in developing countries and is said to be one of the leading cause of death and disability among elderly.

The WHO Global status report on non communicable (NCDs) disease 2010 showed that Non-communicable Diseases are the biggest cause of death worldwide. In India rapid health transition, with large and rising burdens of chronic diseases, which accounted for 53% of all deaths due to NCDs. A study among elderly in rural area of Tamilnadu identified common existing problems includes hypertension 5.1%.

WHO Health Statistics.,(2012) describes worldwide epidemic with an estimated 690 million people having high BP. The numbers of people who need some sort of treatment for high BP include at least 10% of any large group of adults, up to 33% of poorer city adults and about 50% of all people over 65 years of age.

Nearly 16 percent Americans who are 65 years or older are esteemed to be depressed resulting from stress. Over 1.2million people are being isolated in their old age at UK. In India nearly 90million elderly persons suffer in'' God's language' which is silenc. The aging population of Karnataka is found to be 1.7 crore and research shows 21.7 percent of elderly with stress in Hassan.

According to 60<sup>th</sup> National Sample Survey collected data on the old age dependency ratio. In New Delhi over 81% of the elderly confessed to having increasing stress and psychological problems in modern society.



Worldwide according to Framingham Heart study, in men and women free of Hypertension at 55 years of age indicate the remaining lifetime risks for development of Hypertension through 60 and 80 years are 93% and 91% respectively. It is estimated that at least 80% of older Americans are currently living with chronic condition high blood pressure in the elderly. The Delhi Urban study with Hypertension criteria of  $\geq 160/90$ mmHg showed a prevalence of 6.34% under 45 years of age, 22.35% between ages 45-54 years and 28.17% in age group  $\geq 55$  years.

In Karnataka the Prevalence of Hypertension among 60-69 years population to be about 30.5% and 32% in above 70 years population. In Kerala, reported that prevalence of Hypertension among elderly population about 35%.Prevalence of Hypertension in the elder population of Puducherry in South India reported 43.9%.In Chennai Urban population study reported a prevalence of 8% in age below 40 years,28% between 40-60 years and 54% in age group  $> 60$  years.

**Poongodi R., et al (2014)** conducted a experimental study on effectiveness of Progressive muscle relaxation techniques on stress and blood pressure among elderly with Hypertension. Result shows that there was considerable variations in level of stress and blood pressure in the posttests as viewed with the pretest score of the study group at  $P < 0.001$ . The outcome showed substantial variations in the study group which when compared with the control group at  $p < 0.001$  on stress, systolic blood prese and  $p < 0.05$  on diastolic blood pressure. The result highlighted JPMR to be an effective method to decrease the stress and blood pressure among elderly with hypertension.

**Anuja.,(2006)** comparative study was conducted in Kerala to assess the stress, coping strategies and quality of life of institutionalized and non

institutionalized elderly. The study reported that institutionalized elderly have more stress and less quality of life compared to non institutionalized ones  $p<0.05$ .

The need for the study is important because of the high prevalence rates recorded in India and Tamilnadu. It also constitutes a major portion in the non communicable disease records

The researcher during her clinical experience has noticed that the anti-hypertensive therapy which is costly, demands careful monitoring and frequent adjustment and produces troublesome side effects for a high proportion of the population and for the remainder of their lives. High cost of anti-hypertensive is yet another reason for poor compliance with the prescribed treatment plan.

Researcher have a own interest in engaging to do research on effectiveness of JPMR on blood pressure and stress among elderly people. Behavioral interventions like JPMR may decrease or eliminate the need for drug therapy in Hypertension patients. JPMR being a cost-effective intervention, requiring minimum training and no elaborate equipment can be easily offered to the patients for daily home-practice. Various research studies shows that JPMR should be effective in reducing blood pressure and stress among elderly. So it's my responsibility to demonstrate Jacobson Progressive Muscle relaxation techniques to elderly people.

The researcher believes that she could evaluate the effectiveness of the BP control strategy like JPMR in reducing BP and Stress, among Elderly.

## **STATEMENT OF THE PROBLEM**

A study to evaluate the effectiveness of Jacobson Progressive Muscle Relaxation Techniques on blood pressure and stress among elderly people residing in selected old age homes at Trichy.

## **OBJECTIVES**

1. To assess the pre test and post test level of blood pressure and stress among elderly people in experimental and control group.
2. To compare the pre test and post test level of blood pressure and stress among elderly people in experimental and control group.
3. To compare the post test level of blood pressure and stress among elderly people in experimental and control group.
4. To correlate the post test level of blood pressure and stress among elderly people in experimental and control group
5. To find the association between the post test level of blood pressure and stress among elderly people with their selected demographic variables in experimental group.

## **HYPOTHESES**

- H<sub>1</sub>:** There will be a significant difference between pre test and post test level of blood pressure and stress among elderly people
- H<sub>2</sub>:** There will be significant difference between post level of blood pressure and stress in experimental group and control group.
- H<sub>3</sub>:** There will be a significant relationship between post test level of blood pressure and stress among elderly people in experimental and control group.
- H<sub>4</sub>:** There will be a significant association between the post test level of blood pressure and stress among the elderly peoples with their selected demographic variables in experimental group.

## **OPERATIONAL DEFINITIONS**

### **Effectiveness:**

**Sones C., (2001)**, It means producing an intended result

In this study the effectiveness refers to the outcome of progressive muscle relaxation techniques in reducing blood pressure and stress as measured by sphygmomanometer and Perceived stress scale.

### **Jacobson Progressive Muscle Relaxation Techniques:**

**Rena Goldman (2014)** Jacobson's relaxation technique, also known as progressive relaxation therapy, is a type of therapy that focuses on tightening and relaxing specific muscles groups in sequence. By concentrating on specific areas and tensing and then relaxing them, you can become more aware of your body and physical sensations.

In this study, it refers to a relaxation technique in which a person first tenses and relaxes major muscle groups of the body in a prefixed and systematic order, tensing for 5 seconds and relaxation for 10 seconds. It is usually beginning from head and progressing downwards to toes about 20-30 minutes daily morning in 30 consecutive days. Henceforth in this JPMR is referred as Jacobson Progressive Muscle Relaxation Techniques.

### **Blood pressure:**

**Merriam.,(2006)** the blood pressure is the pressure of the blood within the arteries. It is produced primarily by the contraction of the heart muscle. Its measurement recorded by two numbers-Systolic Blood Pressure (SBP=<120mmHg) and Diastolic Blood Pressures (DBP=<80mmHg.).

In this study it refers to the elderly people those who are having blood pressure about SBP=140-179mmHg, DBP=90-109mmHg as measured by sphygmomanometer.

**Stress:**

**Dorland's.,(2006)** a state of physiological or psychological strain caused by adverse stimuli, physical, mental or emotional, internal or external that tends to disturb the functioning of an organism and which the organism naturally desires to avoid.

In this study it refers to the body's reaction to a change that requires a physical, mental or emotional adjustment or response as measured by Perceived stress scale (27-40).

**Elderly People**

**Sonia.,(2009)** Ageing is a process of general, irreversible, and progressive physical deterioration that occurs over time.

In this study it refers to elderly people whose age group is between 51-80 years residing in selected old age home.

**ASSUMPTIONS**

The study assumes that;

- Jacobson progressive muscle relaxation techniques to reduce blood pressure and stress.
- Complication of stress and blood pressure is preventable.
- Nurses play a vital role to deal with elderly people who are affected by blood pressure and stress.

**DELIMITATIONS**

The study was delimited to;

- Elderly people who residing at selected old age homes
- Sample size 60.
- 5 weeks only.

### **PROJECTED OUTCOME**

- Jacobson Progressive muscle relaxation that allows us to recognize and relieve this tension by contracting and then relaxing specific muscle groups.
- Regular practice of Jacobson Progressive Muscle Relaxation Techniques will help elderly to free of stress and blood pressure.
- It also enhances to maintain optimal level of physiological and psychological well being, which will help them to maintain normal blood pressure and stress among elderly in future.

## **CHAPTER – II**

### **REVIEW OF LITERATURE**

Review of literature is an important step in the development of any research project. It helps the researcher to understand the problem in a better manner, to identify the research gaps and render proper justification to the proposed research. This will help to understand the linkages and types of work done so far and thereby one can ensure that proposed research is not redundant. The review of literature helped the researcher in gaining insight into the problem area in designing and conducting the study.

Literatures relevant to this study were reviewed and have been organized in the following sequence.

**Section A:** Studies related to prevalence of stress and blood pressure

**Section B:** Studies related to blood pressure

**Section C:** Studies related to stress

**Section D:** Studies related to effectiveness of Jacobson Progressive Muscle Relaxation techniques on blood Pressure and stress.

#### **STUDIES RELATED TO PREVALENCE OF BLOOD PRESSURE AND STRESS**

**Justin Pikunas.,(2012)** A study was conducted in Jaipur to determine the changing trends in the prevalence of Hypertension and mean blood pressure levels in India and to study the urban and rural differences. A meta- analysis of all available epidemiological studies was performed. Trend analysis of comparable studies among urban areas (N=10) showed a significant increase in the prevalence of Hypertension ( $P=0.014$ ). The studies in rural areas (N=14) also showed an increase in the prevalence of Hypertension although the rise

was not as steep as that in urban populations ( $p=0.097$ ). The meta-analysis concluded that, in India, Hypertension is emerging as a major health problem and is more in urban subjects than in rural subjects.

**Gupta R (2012)** A study was conducted in Jaipur to assess the trends in Hypertension epidemiology in India. The results showed that cardiovascular diseases caused 2.3 million deaths in India during the year 1990 ; this is projected to double by the year 2020. Hypertension is directly responsible for 57% of all stroke deaths and 24% of all coronary heart disease deaths in India. Recent studies using revised WHO criteria ( $BP \geq 140$  and / or 90 mm Hg) have shown a high prevalence of Hypertension among urban adults: men 44%, women 45% in Mumbai ; men 31%, women 36% in Thiruvananthapuram; 14% in Chennai ; and men 36%, women 37% in Jaipur. Among the rural populations, Hypertension prevalence in men 24%, women 17% in Rajasthan. Pooling of epidemiological studies show that Hypertension is present in 25% of urban 10% of rural subjects in India.

**AK Rashid (2009)** conducted a cross-sectional study among the elderly (aged >60) Malay residents living in 22 villages in a northwestern state called Kedah in Malaysia from 2007 to 2009. Kedah one of the highest rates of elderly population in the country. Data was collected by trained research assistants .A purposive convenience sampling was done and who were able to communicate effectively were eligible to participate. Besides the baseline demographic ,blood pressure was measured using standardized methods using a manual sphygmomanometer. The response rate was 97.7%.The prevalence of Hypertension among the elderly in these villages was 54.5%(228) ,118(28.2%) were known to be Hypertension and were on medication and an additional 110(26.3%) respondents were newly diagnosed. Screening the elderly for



Hypertension will benefit this group of people by reducing the morbidity and mortality associated with this condition.

**Gorman et al., (2005)** An analysis of worldwide data to assess the global burden of Hypertension was done by the department of Epidemiology, Tulane University school of public Health, USA. Data was pooled from different regions of the world to estimate the overall prevalence and absolute burden of Hypertension in 2000, and to estimate the global burden in 2025. They searched the published literature from Jan 1, 1980, to Dec 31, 2002, using MEDLINE supplemented by a manual search of bibliographies of retrieved articles. All data were obtained independently by two investigators with a standardized protocol and data collection form. The results showed overall, 26.4% of the adult population (26.6% men and 26.1% women) in 2000 had Hypertension, 29.2% (29% men and 29.5% women) were projected to have this condition by 2025. The study interpreted that Hypertension was an important public health challenge worldwide. Prevention, detection, treatment and control of this condition should receive high priority.

**Gopinath and Chadha et al, (2006)** A study was conducted in India by searching the MEDLINE, EMBASE, and INDMED databases from 1940-2005 to obtain prevalence studies on Hypertension in Indian population. The prevalence of Hypertension in Delhi (criteria  $\geq 160/90$ ) was found to be 11% among males and 12% among females in urban areas and 4% and 3% respectively in rural areas. In the ICMR study in 1994 involving 5537 individuals (3050 urban residents and 2487 rural residents) demonstrated 25% and 29% prevalence of Hypertension (criteria  $\geq 140/90$  mm Hg) among males and females respectively in urban Delhi and 13% and 10% in rural Haryana.

## **STUDIES RELATED TO BLOOD PRESSURE**

**Deepali Hande (2010)** who conducted a study to determine the effectiveness of yoga and exercise therapies (meditation and progressive muscle relaxation technique) to control BP among 221 Hypertension individuals in Gujarat. The results revealed that progressive muscle relaxation technique lowered systolic BP by 4.7mm of Hg and diastolic BP by 3.1mm of Hg. The study concluded that if yoga and exercise therapies should follow together, there is significant reduction in the stress score.

**Hahn.K and Kin.S (2010)** conducted study in Korea to assess the effectiveness of progressive muscle relaxation therapy in the treatment of patients with essential Hypertension. Blood pressure decline was measured on the treatment group who had progressive muscle relaxation training (N=11) and on the control group had no treatment strategies (N=8). Baseline blood pressure was measured four times for two weeks on both groups. For the treatment group, blood pressure was measured twice before and after each of eight sessions of Progressive Muscle Relaxation training for four weeks. For the control group, BP was measured during the visits to a clinic. A significant decline of the systolic BP by 20.6 mm Hg and of the diastolic BP by 14.4 mm Hg was observed in the treatment group ( $p<0.05$ ).

**AM Azizah et al., (2009)** conducted a study on the effects of three relaxation therapies for the reduction of Hypertension in nine Chinese subjects. Subjects were randomly assigned to three groups: (a) Progressive muscle relaxation (b) Stretch Release Relaxation (c) Cognitive imagery relaxation. Systolic and diastolic blood pressure and heart rate were assessed in a baseline session, the 8<sup>th</sup> post – treatment session and a 30-days follow-up session. Data were analyzed using ANOVA and paired sample t-test. Results revealed that in the context of the study all relaxation therapies can reduce blood pressure in

Chinese subjects, but and PMR therapies appeared to be more effective in lowering blood pressure compared to cognitive imagery relaxation and stretch release relaxation.

## **STUDIES RELATED TO STRESS**

**Minseon Park (2013)** stated that Evidence-based stress management: focusing on non-pharmacological procedure which reduce stress and promote health. Stress, which is defined as a situation in which the homeostasis of the physiological system of one's mind and body is threatened, is composed of two concepts: stressors and stress reactions. Meditation and progressive muscular relaxation are well-known and widely used procedures to reduce the stress response and to improve quality of life.

**Jose Rojan, D'Almeida Victoria, (2013)** conducted a study on Effectiveness of Jacobson's Progressive Muscle relaxation Techniques and health related stress among patients with Hypertension in a selected hospital of Mangalore. An evaluatory approach with one group pretest-posttest design was done on a sample of 40 patients diagnosed with Hypertension. JPMR was administered for 20 minutes to the patients for 40 days both in the morning and evening as 8 sessions. Pre and post intervention BP and health related stress was assessed It was concluded that the average reduction of systolic BP was 6.42 mm of Hg and that of diastolic BP was 0.8mm of Hg over the 4 days. The mean health related stress level had reduced from  $94.03 \pm 7.64$  to  $62.8 \pm 7.15$ , with a mean percentage education of 19.5%.JPMR is a cost effective, on-invasive, non-pharmacological alternative therapy in the management of stress and Hypertension.

**Liza Varvogli, Christina Darviri (2009)** conducted a study on Stress Management Techniques: evidence-based procedures that reduce stress and

promote health Athens Medical School, University of Athens. After a thorough literature review in major databases (MEDLINE, Scopus, Science Direct) the following techniques were identified and are presented and briefly discussed here: progressive muscle relaxation, autogenic training, relaxation response, biofeedback, emotional freedom technique, guided imagery, diaphragmatic breathing, transcendental meditation, cognitive behavioral therapy, mindfulness-based stress reduction and emotional freedom technique. These are all evidence-based techniques, easy to learn and practice, with good results in individuals with good health or with a disease.

**Palakh (2008)** conducted a randomized control trial to assess the effectiveness of stress reduction approaches such as transcendental meditation and progressive muscle relaxation among 127 older African Americans in San Francisco. The results revealed that progressive muscle relaxation lowered the systolic B.P by 4.7 mm of Hg [ $P=0.054$ ] and diastolic pressure by 3.3 mm of Hg [ $P\leq 0.02$  mm of Hg]. The study concluded that JPMR techniques demonstrated efficacy in reducing Hypertension in this sample of older African Americans.

**D Berry (2007)** conducted a study in Canada regarding evaluation of progressive muscle relaxation on stress related symptoms in a geriatric population. Ten highly anxious women, between the ages of sixty-nine and eighty-four, participated in a five month study designed to test the hypothesis that progressive muscle relaxation would reduce psychosocial stress in a group of high risk senior citizens. Five women were assigned to the treatment group and five to a control group. The treatment group received two weeks of baseline evaluation, ten weeks of one hour in vivo relaxation training, and ten weeks of home practice using taped instructions. The control group had an identical schedule except instead of progressive relaxation training they

received a pseudorelaxation procedure and had no home practice. All participants were evaluated prior to training, at the end of training, and ten weeks after training. Results indicate significant differences on all five measures between the experimental and control group.

**Khanna A. paul M and sandhu JS (2007)**, had done a study on, efficacy of two relaxation techniques in reducing pulse rate among stressed females, at gurunankdev university, Punjab with 30 highly stressed female and randomly assigned to 3 groups (N=10 each) (a) group 1 receiving galvanic skin resistance feedback (b) group 2 receiving progressive muscle relaxation training (c) group3 control. Results indicated that progressive muscle relaxation training can significantly reduce high pulse rate as compared to other two group. CAT scores were reduced by 50.48% in Progressive Muscle Relaxation group after training.

**Schneider (2007)** conducted a study on Stress Reduction Programs in Patients with Elevated Blood Pressure: A Systematic Review and Meta-analysis Substantial evidence indicates that psychosocial stress contributes to Hypertension. Seventeen trials with 23 treatment comparisons and 960 participants with elevated BP met criteria for well-designed randomized controlled trials and were replicated within intervention categories. In this study it concluded that progressive muscle relaxation, 5.9/3.4 mm Hg ( $P > 0.05$ ); stress management training, 2.3/1.3 mm ( $P = S$ ); ( $P > 0.05$ ).

**Anuja (2006)** conducted a comparative study in Kerala to assess the stress, coping strategies and quality of life of institutionalized and no institutionalized elderly. Data were collected from an old age home in Kottayam from the 150 respondents aged over 60 years. The socio demographic Proforma, stress rating scale, coping inventory and WHO QOL-brief scale was used to collect the data. The study reported that institutionalized

elderly have more stress and less quality of life compared to noninstitutionalized ones.

**Prabhu, k. (2006)** conducted a study to stress the effectiveness of progressive muscle relaxation on stress and coping among single old age men in chevayur. Result suggested that in post intervention among 60 samples 25(41.5%) had less stress and adequate coping, 35(58.3%) had moderate stress none of them has increased stress and inadequate coping the data implies that the effectiveness of progressive muscle relaxation in single old age men was highly significant.

**Melissa Stoppler, M.D (2005)** reported that Progressive muscle relaxation (PMR) is a deep relaxation technique that has been effectively used to control stress and anxiety, relieve insomnia, and reduce symptoms of certain types of chronic pain. Progressive muscle relaxation is based upon the simple practice of tensing, or tightening, one muscle group at a time followed by a relaxation phase with release of the tension. Doctors have used progressive muscle relaxation in combination with standard therapies for symptom relief in a number of conditions, including headaches, cancer pain, Hypertension, and digestive disturbances

**JeongIs (2005)** conducted study on effect of progressive muscle relaxation techniques on perceived stress, stress response, climacteric symptoms of middle aged women at Korea with 36 samples by using cross over pre-post test design result saws that progressive muscle relaxation technique was shown to be effective in reducing physiological stress responses. It was found that pulse rate and blood pressure was decreased by 11.21% and 5mmHg/2.3mmHg.

## **STUDIES RELATED TO EFFECTIVENESS OF JACOBSON PROGRESSIVE MUSCLE RELAXATION TECHNIQUES ON STRESS AND BLOOD PRESSURE**

**Poongodi R., et al (2014)** conducted a study on effectiveness of Progressive muscle relaxation techniques on stress and blood pressure among elderly with Hypertension in selected villages of rural health and training centre of SRMC & RI at Vayalanallur Chennai. Research design was an experimental pretest posttest control group design. sample size for this study was 60 elderly with hypertension in the age group of 60-70 years. Stress level was assessed by perceived stress scale (PSS) and blood pressure was measured by sphygmomanometer. The progressive muscle relaxation technique was given for 20 minutes for 21 days. Control group followed routine activities. There were considerable variations in level of stress and blood pressure in the posttests as viewed with the pretest score of the study group at  $P < 0.001$ . The outcome shows variations in the study group which when compared with the control group at  $p < 0.001$  on stress, systolic blood pressure and  $p < 0.05$  on diastolic blood pressure. The result highlighted JPMR to be an effective method to decrease the stress and blood pressure among elderly with hypertension.

**Conrad A. & Roth W.T., (2014)** conducted a comparative study on to find the effectiveness of Galvanic Skin Response biofeedback and progressive muscle relaxation training in reducing blood pressure and respiratory rate among 30 highly stressed individuals in Amritsar. Training was given for 20 minutes daily for 10 consecutive days. The results revealed that post training values indicated that progressive muscle relaxation group showed significant differences for systolic blood pressure [ $P < 0.05$ ] and diastolic blood pressure [ $P < 0.01$ ] and the study concluded that galvanic skin response biofeedback and

progressive muscle relaxation training resulted in lowering both systolic and diastolic blood pressure.

**Alessio F, et al.,(2014)** conducted in DeKalb to evaluate the effects of PMR on blood pressure of hypertensive clients. After collection of baseline data, 22 clients received group relaxation training followed by individual monitoring sessions over a 4 week period, while 22 persons in the control group did not receive relaxation training. The group instructed in relaxation had a lower mean systolic BP ( $p < 0.05$ ) than the non-trained group. While the relaxation trained group showed a significant decrease ( $p < 0.02$ ) in diastolic pressure from baseline to follow-up, the difference between trained and non-trained groups at follow-up was significant ( $p = S$ ). Relaxation taught initially in group with individual follow-up visits, resulted in continued practice of relaxation and subsequent lowering of blood pressure.

**Jose Rojan, D'Almeida., (2013)** conducted a study on, the Effectiveness of Jacobson's Progressive Muscle Relaxation (JPMR) on Blood Pressure and Health Related Stress Level among Patients with Hypertension in a Selected Hospital of Mangalore. The aim of the study is to assess the effectiveness of Jacobson's Progressive Muscle Relaxation (JPMR) on blood pressure and health related stress level among patients with hypertension. An evaluatory approach with one group pretest- post test design was done on a sample of 40 . JPMR was administered for 20 minutes to the patients for 4 days both in the morning and evening as 8 sessions. Pre and post intervention BP and health related stress was assessed, The mean systolic BP had reduced from  $155.8 \pm 10.14$  to  $121.7 \pm 4.47$  and mean diastolic BP had reduced from  $92.7 \pm 4.52$  to  $79.9 \pm 62.63$  after the administration of JPMR. The average reduction of systolic BP was 6.42 mm of Hg and that of diastolic BP was 0.8 mm of Hg over the 4 days. The mean health related stress level had reduced from  $94.03 \pm$



7.64 to  $62.8 \pm 7.15$ , with a mean percentage reduction of 19.5%. JPMR is a cost-effective, non-invasive, non-pharmacological alternative therapy in the management of stress and hypertension.

**Nisha Shinde.,(2013)** conducted a study on Immediate effect of Jacobson's progressive muscular relaxation techniques in Hypertension. The study was designed as an experimental study. Study period September 2011 to December 2011. Study settings Various colleges in the vicinity of the place of study and department of physiotherapy, Pravara institute of medical sciences, Loni, State Maharashtra, India. A total of 250 college and school teachers were examined. Out of that 105 subjects were found as hypertensive & were willing to participate in study. After the trial session every subject performed this supervised Jacobson's progressive muscular relaxation for 30 min, after 30 min of training. Outcome measures were reassessed immediately after the JPMR in sitting position that is Blood Pressure and Heart Rate. There were highly significant differences in Pre & Post Blood pressure (systolic & diastolic) Heart Rate. There was statistically significant difference in systolic Blood pressure ( $p < 0.01$ ), diastolic Blood pressure ( $p = 0.05$ ) and Heart rate ( $p < 0.05$ ) significant reduction in post session (Jacobson's progressive muscular relaxation).

**Vipina Mohan.,(2013)** conducted a study on Effectiveness of Jacobson's progressive muscle relaxation technique on stress among elderly hypertensive inmates in selected old age homes of Dakshina Kannada District. The research design adopted for the present study is quasi-experimental non-equivalent control group design. Sampling procedure selected is non-probability purposive sampling technique. Sample consists of 60 hypertensive inmates of an old age home who are having stress with 30 each in experimental and control group. Modified Holmes and Rahe stress rating scale was used to

assessed the stress level of elderly hypertensive inmates. It is a systematic therapy for managing stress among elderly. This study concluded that Jacobson progressive muscle relaxation techniques effective in reducing stress among elderly hypertensive.

**Sheu et al. (2012)** conducted a quasi-experimental study was conducted to evaluate the effectiveness of progressive muscle relaxation on blood pressure and psychological status among 40 hypertensive subjects in Taiwan. The result revealed that progressive muscle relaxation training has an immediate effect, reducing the pulse rate 2.35bpm, systolic B.P 5.44 mm of Hg and diastolic B.P 3.48 mmHg after two weeks of training. After 4 weeks of progressive muscle relaxation further decrease in pulse rate 2.9 bpm, systolic B.P 5.1 mmHg and diastolic B.P 3.1 mmHg occurred. The study concluded that progressive muscle relaxation significantly lowered patient's perception on stress and it enhanced patient's perception on health and progressive muscle relaxation is beneficial for patients with essential hypertension.

**Patel., (2012)** conducted a study on Effectiveness Of Progressive Muscle Relaxation Therapy on Stress among Staff Nurses Working In Selected Hospitals at Vadodara City, India. Pre experimental one group pre - test and post -test research design was adopted for this study to achieve the goal of the study by using instrument - demographic data and stress assessment scale among 30 staff nurses. . It is an effective and widely used strategy for stress relief. The findings of the study revealed that in pre test most of the nurses 53.3% had moderate stress, 40.0% had mild stress and 6.7% had severe stress. In post test most of the nurses had mild stress 73.3 % and no stress 26.7 % . It is concluded that Progressive Muscle Relaxation Therapy is effective in reducing the stress level of the staff nurses.

**Archana Khanna,et al (2007)** conducted a study on effectiveness of GSR biofeedback training and progressive muscle relaxation training in reducing blood pressure and respiratory rate among highly stressed individuals, Amritsar, India carried out of 120 females, only those anxiety scores were greater than 40 and percentile greater than 70 were selected for the study. Ultimately thirty highly stressed females with high anxiety scores. The training were provided only 20 min daily for 10 consecutive days only group 1 showed significant reduction in post training values of respiratory rate on day 10 as compared to day 1. statistically significant difference were observed on intercrop comparison between GSR biofeedback and control group ( $t=2.79$ ) and between PMR and control group ( $t=3.19$ ). In this study, the result revealed progressive muscle relaxation training showed significant decrease in blood pressure whereas GSR biofeedback training showed a decrease in respiratory rate. Both techniques are simple and easy to use. These can be well adopted to people who face stressful conditions.

**Gillum.R.,(2006)** conducted a experimental study on progressive muscle relaxation therapy in essential hypertension and stress among 171 hypertensive patients. The analysis of BP dynamic during 6 week revealed significantly ( $p<0.001$ ) systolic BP ( $-10.4\pm0.8$ ) and diastolic BP ( $-7.7\pm0.6$ ) by the end of one year control group BP returned to the initial level. BP reduction has been found in 62% of patients in the main group and only 12% of patients of the control group. The study concluded that relaxation therapy is effective in reducing BP and stress.

## **CONCEPTUAL FRAMEWORK**

Conceptual framework helps to express abstract ideas in a more reality, understandable, and precise form of the original conceptualization. The conceptual framework for this study was adapted from **Wiedenbach's helping art of clinical nursing theory (1969)**.

According to Ernestine Wiedenbach's nursing is nurturing and caring for someone in a motherly fashion. Nursing is a helping service that is rendered with compassion, skill and understanding to those in need for care, counsel and confidence in the area of health. The practice of nursing comprises a wide variety of services each directed toward the attainment of one of its three components.

Step 1: Identification of a Need for Help

Step II: Ministration of help needed

Step III: Validation that need for help was met

## **CENTRAL PURPOSE**

According to the theorist the nurse's central purpose defines the quality of health. She desires to effect or sustain her patient and specifies what she recognizes to be her special responsibility in caring for the patient.

In this study, the central purpose is to reduce the level of blood pressure and stress among elderly people in selected old age home.

## **STEP I: IDENTIFICATION OF A NEED FOR HELP**

According to the therapist within the identification component there are four distinct steps. First, nurse observes the patient, looking for an inconsistency between the expected behavior of the patient and the apparent behavior. Second, she attempts to clarify what the inconsistency means. Third,

she determines the cause of the inconsistency. Finally she validates with the patient that her help is needed.

In this study, the general information which comprises the age, gender, marital status, religion, educational stats, Body mass index, dietary pattern, history of illness, leisure time. Pre test was done to assess the level of Blood Pressure and stress by susing Mercury sphygmomanometer and Perceived stress rating Scale respectively.

## **STEP II: MINISTRATION OF THE HELP NEEDED**

According to the theorist, in ministering to the patient, the nurse may give advice or information, make referral, apply a comfort measures or carry out a therapeutic procedures. The nurse will need to identify the cause and if necessary make an adjustment in the plan of action.

Ministration of help needed has two components,

1. PRESCRIPTION
2. REALITIES

### **1. PRESCRIPTION**

According to the theorist a prescription is directive to activity. It specifies both the nature of action that will most likely lead to fulfillment of the nurse's central purpose and the thinking process that determines it.

In this study prescription is plan of care to achieve the purpose which includes teaching Jacobson Progressive Muscle relaxation techniques and practicing Jacobson Progressive Muscle relaxation techniques for 20 minutes in the morning for 30 days by the elderly people with Blood Pressure and Stress.

## **2. REALITIES**

According to the theorist, the realities of situation which the nurse is to provide nursing care. Realities consist of all factors- physical, physiological, emotional and spiritual those are at play in a situation in which nursing actions occur at any given moment. Wiedenbach's defines the five realities as the agent, the recipient, the goal, the means, and the framework.

### **1. AGENT**

According to the theorist, the agent is the practicing nurse or her delegate is characterized by personal attribute capacities, capabilities and most importantly commitment and competence in nursing.

In this study, the investigator is the agent.

### **2. RECIPIENT**

According to the theorist, the recipient is the patient characterized by the personal attributed problem, capabilities aspirations and most important is the ability to cope with the concerns or problem being experienced.

In this study, the recipients are elderly people who are residing in selected old age home.

### **3. GOAL**

According to the theorist, the goal is the desired outcome the nurse wishes to achieve. The goal is the end result to be attained by the nursing action.

In this study, it refers to reduction of Blood pressure and Stress among elderly people who are residing in selected old age home.

#### **4. MEANS**

According to the theorist, the means comprise the activities and devices through which the practitioner is enabled to attain her goal. The means include skilled techniques, procedures and devices that may be used to facilitate nursing practice.

In this study, it refers to implementation of Jacobson Progressive Muscle relaxation techniques by elderly people for 30 days.

#### **5. FRAMEWORK**

According to the theorist, the framework consists of the human, environmental, professional and organizational facilities that not only make up the context within which nursing is practiced but also constitutes currently existing limits.

In this study, it refers to the St. Thomas mercy dying institute and St. Antony's old age home at Trichy.

#### **STEP III: VALIDATION THAT NEED FOR HELP WAS MET**

According to the theorist the third component is validation. After help has been ministered the nurse validates that the actions were indeed helpful. Evidence must come from the patient that the purpose of the nursing action has been fulfilled.

In this study, validating the need for help was met by means of post assessment of level of Blood pressure and Stress which was done after 30 days of intervention. Positive outcomes are presence of normal and pre hypertensive level of blood pressure and low and moderate level of stress. Negative outcomes are presence of grade I and Grade II level of blood pressure and high perceived stress which in turn may need ministering the needed help

## CENTRAL PURPOSE

To reduce the level of blood pressure and stress among elderly people in selected old age home, Trichy.

### STEP-I IDENTIFICATION OF THE NEED FOR HELP

#### DEMOGRAPHIC VARIABLE

Age, gender, marital status, religion, educational status, body mass index, dietary pattern, history of illness, recreational activity.

#### PRE TEST

Assessment of blood pressure using sphygmomanometer and stress by using Percived Stress Scale.

#### PRESCRIPTION

Jacobson  
Progressive Muscle  
Relaxation  
techniques for 20 -  
30minutes in the  
morning for 30  
days.

### STEP-II MINISTRATION OF HELP NEEDED

#### REALITIES

**Agent-** Investigator  
**Recipient-** Elderly  
people who are residing  
in selected old age home.  
**Goal-** Central purpose  
**Means-** Implementation  
of Progressive Muscle  
Relaxation techniques  
for 30 days  
**Framework-** St.  
Thomas mercy dying  
Institute and  
St.Antony's Old age  
home.

#### POST TEST

Assessment of  
Blood pressure  
using  
sphygmomanometer  
and stress by using  
Perceived Stress  
Scale after 30 days  
of intervention.

### STEP-III VALIDATION THAT NEED FOR HELP WAS MET

#### Low stress

#### Moderate stress

#### High Perceived stress

#### Normal

#### Pre hypertensive

#### Grade I

#### Hypertension

#### Grade II

#### hypertension

Feed back

CONCEPTUAL MODEL BASED ON MODIFIED WIENBACH'S HELPING ART OF CLINICAL NURSING THEORY(1969)



## **CHAPTER – III**

### **METHODOLOGY**

This chapter deals with methodological approach adopted for the study. It includes description of research approach, research design, setting of the study, population, and sample, criteria for sample selection, sample size and sampling technique, instrument and scoring procedure, validity, reliability, method of data collection and plan for data analysis.

#### **RESEARCH APPROACH**

Evaluative approach was used to conduct the study.

#### **RESEARCH DESIGN**

The research design selected for this study is quasi experimental non equivalent pretest and post test control group design which is represented below.

<b>GROUPS</b>	<b>PRE TEST</b>	<b>INTERVENTION</b>	<b>POST TEST</b>
Experimental group	O <sub>1</sub>	X	O <sub>2</sub>
Control group	O <sub>3</sub>	-	O <sub>4</sub>

#### **The symbols used:**

O<sub>1</sub> & O<sub>3</sub> – Collection of demographic data, pre test to assess the level of blood pressure and stress among elderly people in experimental and control group.

X – Demonstrating and assisting to do Jacobson Progressive Muscle relaxations Techniques to a group of elderly people with blood pressure and stress

O<sub>2</sub> & O<sub>4</sub> – Posttest to assess the level of blood pressure and stress among elderly people in experimental and control group.

## **VARIABLES**

**Dependent Variables:** Blood pressure, Stress

**Independent Variable:** Jacobson Progressive Muscle Relaxation Techniques

**Demographic Variables:** Age, Gender, Marital status, Religion, Educational status, Body mass index, Dietary pattern, History of illness and Recreational activity.

## **SETTING OF THE STUDY**

The study was conducted in St. Thomas mercy dying institute at Trichy for experimental group and St. Antony old Age home at Trichy for control group. It was situated 20kms from Indira College Of Nursing. 350 elderly peoples were resided in both homes. The number of elderly people with blood pressure and stress where 80 members. Among them I have taken 60 samples for my study (30 for experimental group and 30 for control group) who met inclusive criteria.

## **POPULATION**

Polit and hungler is the entire aggregation of cases in which the researcher is interested.

The target population selected for this study was elderly people with blood pressure (SBP=140-179mmHg, DBP=90-109mmHg) and stress (27-40).

The Accessible population for the study was elderly people with blood pressure and stress in St. Antony old Age home and St. Thomas mercy dying institute, at Trichy. Approximately 250 elderly people were resided.

## **SAMPLE**

Polit and hunger stated that, sample consist of a subset of population selected to participate in a research study.

Sample selected for the present study was elderly people who are resided in St. Antony old Age home and St. Thomas mercy dying institute, at Trichy.

## **SAMPLE SIZE AND SAMPLING PROCEDURE**

### **SAMPLE SIZE**

Polit and Hunger (1995) stated that, sample consist of a subset of population selected to participate in a research study.

The sample size consists of 60 elderly people with blood pressure and stress. 30 samples in experimental group and 30 samples in control group.

### **SAMPLING TECHNIQUE**

Purposive sampling technique was used to select the samples for the study.

## **CRITERIA FOR SAMPLE SELECTION**

### **INCLUSION CRITERIA**

- Elderly people had blood pressure (SBP=140-179mmHg, DBP=90-109mmHg)
- Elderly people had Stress(27-40)
- Elderly People age group between 51-80 years.
- Able to follow instructions
- Elderly people who can understand Tamil or English.
- Elderly people who were willing to participate in this study.

## **EXCLUSION CRITERIA**

- Elderly had blood pressure more than 180/120 mmHg
- Elderly not able to perform relaxation techniques regularly
- Elderly who were physically inactive
- Elderly who were bedridden
- Elderly having other pathological conditions
- Elderly who is on treatment for hypertension.

## **INSTRUMENT AND SCORING PROCEDURE**

### **DESCRIPTION OF THE INSTRUMENT**

The tool consists of three parts.

#### **Part I**

It deals with demographic variables such as ,age, gender ,marital status, Religion, Educational status, Body mass index, Dietary Pattern, History of Illness and recreational activity.

#### **Part II**

Check the level of Blood pressure for elderly those who fulfilled inclusion and exclusion criteria by using sphygmomanometer.

#### **Part III**

Assess the level of stress for elderly those who fulfilled inclusion and exclusion criteria by using perceived stress scale.

## II. SCORING PROCEDURE:

### Part II

<b>Blood Pressure</b>	<b>Normal</b>	<b>Pre-Hypertensive</b>	<b>Grade-I Hypertension</b>	<b>Grade-II Hypertension</b>
SBP	< 120	120-139	140-159	160-179
DBP	< 80	80-89	90-99	100-109

SBP-systolic blood pressure

DBP-diastolic blood pressure

### Part III

Perceived Stress Scale was used to assess the level of stress. The score was interpreted as follows,

<b>Level of Stress</b>	<b>Score</b>	<b>Percentage</b>
Low Stress	0-13	32.5%
Moderate Stress	14-26	65%
High Perceived Stress	27-40	100%

- Never - 0
- Almost Never - 1
- Sometimes - 2
- Fairly Often -3
- Very Often -4

## CONTENT VALIDITY

Polit and hungler(1999) stated that it is concerned that sampling adequacy of items for the construct that is being measured. Content validity is relevant for both affective and cognitive measures. The content validity of an instrument is necessarily based on judgement. The content validity of the tool

was done by 4 nursing experts, 1 psychologist, 2 medical officer. Experts were asked to give their opinion and suggestions about the concept of the tool. The modification recommended by the experts were incorporated in the final preparation of the tool by the investigator. The tool was translated into Tamil by language Experts.

## **RELIABILITY**

**Polit and Hungler (1999)** state that one important characteristics of measuring tool is its reliability, which refers to the degree of consistency or accuracy with which an instrument measures an attribute.

The Reliability of the tool was determined by using test retest methods. The reliability of the sphygmomanometer  $r=0.82$  and for stress  $r=0.89$ . Hence the tool was found to be statistically reliable for the study.

## **PILOT STUDY**

In order to test the feasibility, relevance and practicality of the study, a pilot study was conducted among elderly regarding blood pressure and stress. The data collection period was one week. Before starting the study the researcher obtained oral and written permission from the Annai old age home and Good Shepherd old age home Trichy. The data collected were amenable to statistical analysis and thus study was found to be feasible.

## **DATA COLLECTION**

The main study was conducted in St. Thomas mercy dying institute, Trichy for the experimental group and St. Antony old Age home at Trichy for the control group. The investigator obtained a written permission from the head of the institutions and oral consent from the samples prior to the study. The purpose of the study was explained to the samples. 60 samples (30 for

experimental group & 30 for control group) were selected by using purposive sampling technique. The samples were gathered at recreational hall of the old age homes. Blood pressure was checked in the left arm with sphygmomanometer for 5-10 minutes and stress level was assessed by using Perceived stress scale for 15-20 minutes. After pre test assessment of the Blood pressure and stress level of elderly people, the JPMR was demonstrated for experimental group by dividing them into 5 groups and made to practice it under the supervision and guidance of the investigator for 20-30 minutes in the morning for a period of 30 days. Control group carry out their routine activities After practicing this JPMR for 30 days the post test level of Blood pressure was checked and the level of Stress was assessed by using same instruments for experimental group. In control group the post test level of blood pressure was checked and stress was assessed without giving interventions.

#### **PLAN FOR DATA ANALYSIS**

The data was analyzed by using both descriptive and inferential statistics. The data related to demographic variables were analyzed by using descriptive measures (frequency and percentage). Interpretation of blood pressure and stress of elderly people were analyzed by using descriptive statistics (Mean, Standard deviation ). The effectiveness of progressive muscle relaxation therapy on blood pressure and stress were analyzed by “t” test. The association , correlation between blood pressure and stress were analyzed by using inferential statistics.

## **PROTECTION OF HUMAN SUBJECTS**

The study was approved by the dissertation committee prior to the conduct of pilot and main study. A written consent was obtained from the Sister in Charge of St. Antony old Age home and St. Thomas mercy dying institute, at Trichy. Verbal consent was obtained from the samples by explaining the purpose of the study prior to the data collection. Confidentiality was maintained throughout the study.



## **CHAPTER – IV**

### **DATA ANALYSIS AND INTERPRETATION**

It is a systematic organization and synthesis of research data. In order to answer the research questions and test hypothesis. Interpretation is the process of making sense of study results and of examining their implications. Descriptive and inferential statistics was used to analysis the data

This chapter deals with analysis and interpretation of data to study the effectiveness of Jacobson Progressive Muscle Relaxation on blood pressure and stress among elderly people residing in selected old age homes. The data findings have been presented in the forms of tables and graphs. The data analysis was done based on the objectives of the study.

#### **OBJECTIVES**

1. To assess the pre test and post test level of blood pressure and stress among elderly people in experimental and control group.
2. To compare the pre test and post test level of blood pressure and stress among elderly people in experimental and control group.
3. To compare the post test level of blood pressure and stress among elderly people in experimental and control group.
4. To correlate the post test level of blood pressure and stress among elderly people in experimental and control group
5. To find the association between the post test level of blood pressure and stress among elderly people with their selected demographic variables in experimental group.

## **ORGANIZATION OF THE DATA**

The findings of the study were grouped and analyzed under the following sections.

- SECTION A:** Distribution of demographic variables of among elderly people in experimental and control group.
- SECTION B:** Assess the pre test and post test level blood pressure among elderly people in experimental and control group.
- SECTION C:** Assess the pre test and post test level of stress among elderly people in experimental group and control group.
- SECTION D:** Comparison between the pre test and post test level of blood pressure and stress among elderly people in experimental group.
- SECTION E:** Comparison between the post test level of blood pressure among elderly people between experimental and control group.
- SECTION F:** Comparison between the post test level of stress among elderly people between experimental and control group.
- SECTION G:** Correlate the post test level of blood pressure and stress among elderly in experimental and control group
- SECTION H:** Association between the post test level of blood pressure among elderly with their selected demographic variables in experimental group.
- SECTION I:** Association between the posttest level of stress among elderly people with their selected demographic variables in experimental group.

**SECTION A:        DISTRIBUTION OF DEMOGRAPHIC VARIABLES  
AMONG ELDERLY PEOPLE**

**TABLE 1:** Frequency and percentage distribution of demographic variables

$n_1 = 30, n_2=30$

S. NO	DEMOGRAPHIC VARIABLES	EXPERIMENTAL GROUP		CONTROL GROUP	
		f	%	f	%
1.	<b>Age</b>				
1.1	51- 60 years	4	13.33%	5	16.67%
1.2	61 - 70 years	22	73.33%	20	66.67%
1.3	71- 80 years	4	13.33%	5	16.67%
2.	<b>Gender</b>				
2.1	Male	9	30%	7	23.33%
2.2	Female	21	70%	23	76.67%
3.	<b>Marital status</b>				
3.1	Married	3	10%	5	16.7%
3.2	Single	2	6.67%	4	13.33%
3.3	Widow\Widower	22	73.33%	19	63.33%
3.4	Separated	3	10%	2	6.67%
4.	<b>Religion</b>				
4.1	Hindu	20	66.67%	17	56.67%
4.2	Christian	8	26.67%	10	33.33%
4.3	Muslim	2	6.67%	3	10%
5.	<b>Educational status</b>				
5.1	Primary Education	12	40%	10	33.33%
5.2	Secondary Education	7	23.33%	8	26.67%
5.3	Under Graduates	2	6.67%	3	10%
5.4	Post Graduates	-	-	3	10%
5.5	Illiterate	9	30%	6	20%
6.	<b>Body Mass Index</b>				
6.1	Under weight	2	6.67%	4	13.33%
6.2	Normal	13	43.33%	10	33.33%
6.3	Over Weight	15	50%	16	53.33%

7.	<b>Dietary Pattern</b>				
7.1	Vegetarian	2	6.67%	6	20%
7.2	Mixed	28	93.33%	24	80%
8.	<b>History of Illness</b>				
8.1	Smoking	2	6.67%	5	16.67%
8.2	Alcoholism	2	6.67%	-	
8.3	Smoking\Alcoholism	17	56.67%	19	63.33%
8.4	Hereditary	3	10%	2	6.67%
8.5	Others	6	20%	4	13.33%
9.	<b>Recreational activity</b>				
9.1	Reading books	8	26.67%	10	33.33%
9.2	Watching TV	9	30%	8	26.67%
9.3	Gardening	8	26.67%	6	20%
9.4	Others	5	16.67%	6	20%

Represents the frequency percentage distribution of demographic variables among elderly people. With respect to age, in experimental group majority of them 22 (73.33%) belonged to age group of 61-70 years, 4(13.33%) belonged to age group of 51-60 years, and 4(13.33%) belonged to age group of 71-80 years. In control group majority 20 (66.67%) belonged to age group of 61-70years, 5(16.67%) belonged to age group of 51-60 years, and 5(16.67%) belonged to 71-80 years.

With regard to gender, in experimental group majority of them 21 ( 70%) were female and rest 9 (30%) were male. In control group majority 23(76.67%) were female and 7(3.33%) were male.

With regard to marital status, in experimental group majority 22(73.33%) were widow/widower, 3(10%) were married, 3(10%) were separated and 2(6.67%) were single. In control group majority 19(63.33%)

were widow/widower, 5(16.7%) were married,4(13.33%) were single and 2(6.67%) were separated.

In related to Religion, in experimental group majority 20(66.67%) were Hindu, 8(26.67%) were Christian and 2(6.67%) were Muslim. In control group majority 17(56.67%) were Hindu, 10(33.33%) were Christian and 3(10%) were Muslim.

In accordance with educational status, in experimental group majority 12 (40%) had primary education, 9 (30%) had illiterate, 7(23.33%) had secondary education, and 2(6.67%) had under graduates. In control group majority 10 (33.33%) had primary education, 8(26.67%) had secondary education, 6(20%) had Illiterate, 3(10%) had under graduates and 3(10%) had post graduates.

Regarding body mass index, in experimental group majority 15(50%) had over weight, 13(43.33%) had normal weight and 2(6.67%) had underweight. In control group, majority 16(53.33%) had over weight,10(33.33%) had normal weight and 4(13.33%) had underweight.

With regard to Dietary pattern, In experimental group majority 28(93.33%) had mixed diet and 2(6.67%) had vegetarian. In control group majority 24(80%) had mixed diet and 6(20%) had vegetarian.

In related to history of illness, in experimental group, majority 17(56.67%) had occurred due to Smoking/alcoholism, 6(20%) had occurred due to others,3(10%) had occurred due to hereditary,2(6.67%) had occurred due to smoking and 2(6.67%) had occurred due to alcoholism. In control group, majority 19(63.33%) had occurred due to Smoking/alcoholism, 5(16.67%) had occurred due to smoking, 4(13.33%) had occurred due to others, and 2(6.67%) had occurred due to hereditary.

Regarding to recreational activity, in experimental group, majority 9(30%) were watching TV,8(26.67%) were reading books,8(26.67%) were gardening and 5(16.67%) were other activities. In control group, majority were reading books 10(33.33%),8(26.67%) were watching TV,6(20%) were gardening ,and 6(20%) were other activities.

**SECTION B: ASSESS THE PRE TEST AND POST TEST LEVEL OF BLOOD PRESSURE AMONG ELDERLY PEOPLE IN EXPERIMENTAL GROUP AND CONTROL GROUP**

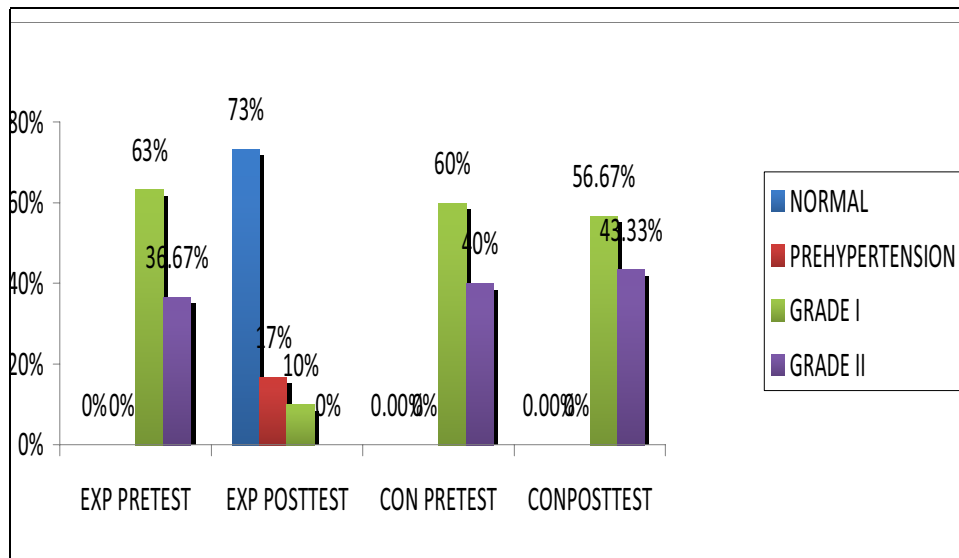
**TABLE 2a:** Frequency and percentage distribution of pre test and post test level of SBP among elderly in experimental and control group.

$n_1 = 30; n_2 = 30$

S. NO	LEVEL OF SBP	EXPERIMENTAL GROUP				CONTROL GROUP			
		Pre test		Post test		Pretest		Posttest	
		F	%	f	%	f	%	f	%
1.	Normal (< 120mmHg)	-	-	22	73.33%	-	-	-	-
2.	Pre hypertensive (120- 139mmHg)	-	-	5	16.67%	-	-	-	-
3.	Grade I Hypertension (140-159mmHg)	19	63.33%	3	10%	18	60%	17	56.67%
4.	Grade II Hypertension (160-179mmHg)	11	36.67%	-	-	12	40%	13	43.33%

The inferences made were

In pre test majority of them 19(63.33%) had grade I hypertension and 11 (36.67%) had grade II hypertension in the experimental group and 18(60%) had grade I hypertension and 12 (40%) had grade II hypertension in the control group. In post test majority 22(73.33%) had normal level of SBP and 5 (16.67%) had pre hypertension and 3(10%) had grade I hypertension in the experimental group and 13 (43.33%) had grade II hypertension in the control group



**FIGURE 3: Percentage distribution of pre test and post test level of SBP among elderly in experimental and control group.**

It depicts that, in pre test majority of them 19(63.33%) had grade I hypertension and 11 (36.67%) had grade II hypertension in the experimental group and 18(60%) had grade I hypertension and 12 (40%) had grade II hypertension in the control group. In post test majority 22(73.33%) had normal level of SBP and 5 (16.67%) had pre hypertensive stage and 3(10%) had grade I hypertension in the experimental group and 13 (43.33%) had grade II hypertension in the control group

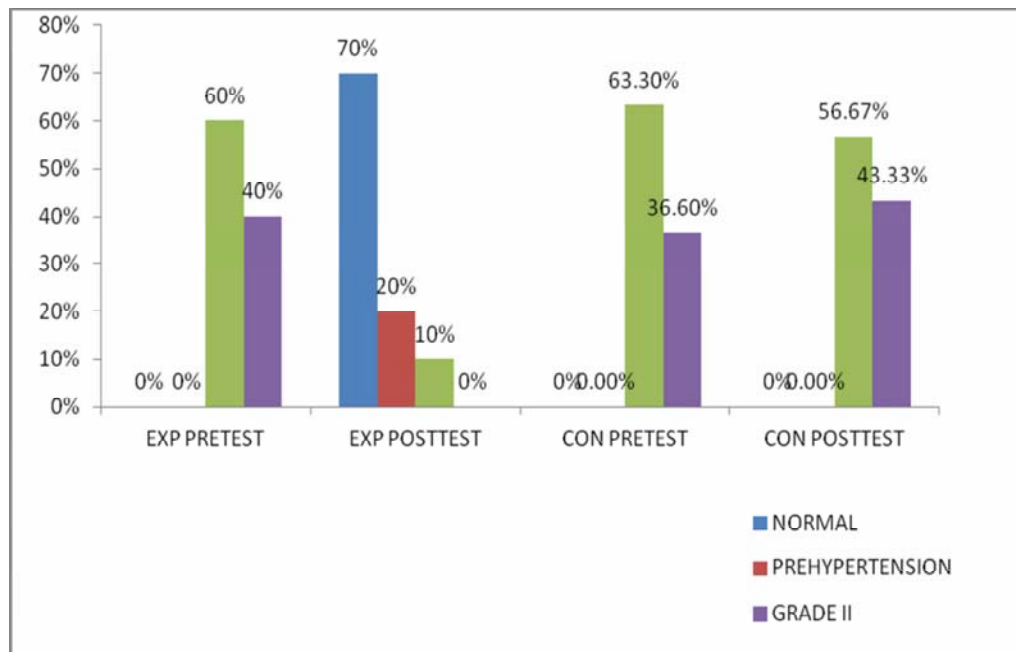


**TABLE 2b:** Frequency and percentage distribution of pre test and post test level of diastolic blood pressure among elderly in experimental and control group.

S. NO	LEVEL OF DBP	EXPERIMENTAL GROUP				CONTROL GROUP			
		Pre test		Post test		Pretest		Posttest	
		f	%	f	%	F	%	f	%
1.	Normal (< 80mmHg)	-	-	21	70%	-	-	-	-
2.	Pre hypertension 80-89mmHg)	-	-	6	20%	-	-	-	-
3.	Grade I Hypertension (90-99mmHg)	18	60%	3	10%	19	63.3%	17	56.67%
4.	Grade II Hypertension (100-109mmHg)	12	40%	-	-	11	36.6%	13	43.33%

The inference made were

In pre test majority 18(60%) had grade I hypertension and 12 (40%) had grade II hypertension in the experimental group and 19(63.3%) had grade I hypertension and 11(36.6%) had grade II hypertension in the control group. In post test majority 21(70%) had normal level of DBP and 6 (20%) had pre hypertension and 3(10%) had grade I hypertension in the experimental group and 17 (56.67%) had grade II hypertension and 13(43.33%) had grade II hypertension in the control group.



**Fig 4. Percentage distribution of pre test and post test level of diastolic blood pressure among elderly in experimental and control group.**

It depicts that, in pre test majority 18(60%) had grade I hypertension and 12 (40%) had grade II hypertension in the experimental group and 19(63.3%) had grade I hypertension and 11(36.6%) had grade II hypertension in the control group. In post test majority 21(70%) had Normal level of DBP and 6 (20%) had pre hypertensive stage and 3(10%) had grade I hypertension in the experimental group and 17 (56.67%) had grade II hypertension and 13(43.33%) had grade II hypertension in the control group.

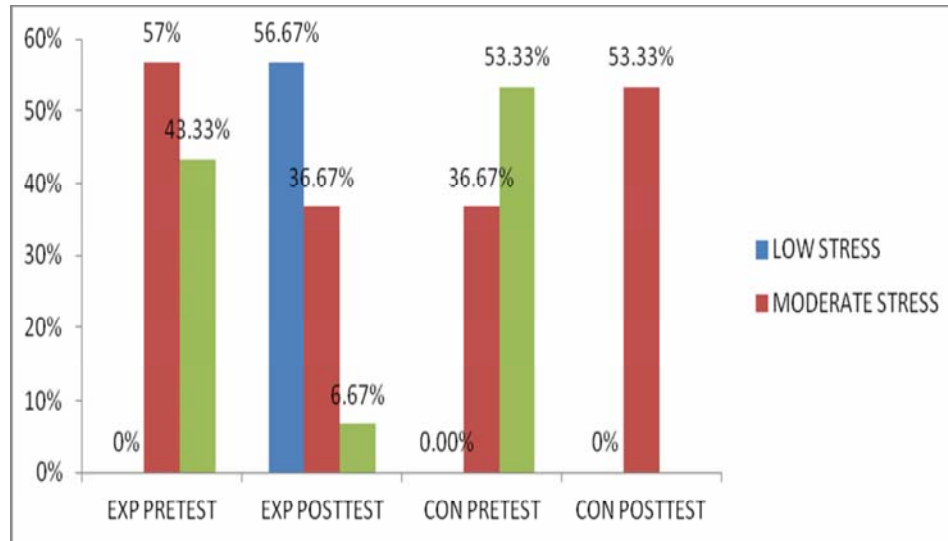
**SECTION C: ASSESS THE PRE TEST AND POST TEST LEVEL OF STRESS AMONG ELDERLY PEOPLE IN EXPERIMENTAL GROUP AND CONTROL GROUP**

**TABLE 3:** Frequency and percentage distribution of pre test and post test level of stress among Elderly people in experimental and control group.

$n_1=30; n_2=30$

S. NO	LEVEL OF STRESS	EXPERIMENTAL GROUP				CONTROL GROUP			
		Pretest		Post test		Pretest		Post test	
		f	%	f	%	f	%	F	%
1.	Low Stress(0-13)	-	-	17	56.67		-	-	-
2.	Moderate Stress(14-26)	17	56.67	11	36.67	11	36.67	16	53.33
3.	High Perceived Stress(27-40)	13	43.33	2	6.67	19	63.33	14	46.67

In pre test majority 17(56.67%) had moderate stress and 13 (43.33%) had high perceived stress in the experimental group and 19 (63.33%) had high perceived stress and 11(36.67%) had moderate stress in the control group. In post test majority 17(56.67%) had low stress ,11 (36.67%) had moderate stress and 2(6.67%) had high perceived in the experimental group and 16 (90%) had moderate stress and 14 (46.67%) had high perceived stress in the control group.



**Fig 5. Percentage distribution of pre test and post test level of stress among Elderly People in experimental and control group.**

It depicts that, in pre test majority 17(56.67%) had moderate stress and 13 (43.33%) had high perceived stress in the experimental group and 19 (63.33%) had high perceived stress and 11(36.67%) had moderate stress in the control group. In post test majority 17(56.67%) had low stress ,11 (36.67%) had moderate stress and 2(6.67%) had high perceived in the experimental group and 16 (90%) had moderate stress and 14 (46.67%) had high perceived stress in the control group.

**SECTION: D      COMPARE THE PRE TEST AND POST TEST  
LEVEL OF BLOOD PRESSURE AND STRESS AMONG  
ELDERLY IN EXPERIMENTAL GROUP AND CONTROL  
GROUP.**

**TABLE 4a:** Comparison of mean, standard deviation of pre test and post test level of SBP among elderly in experimental group.

n=30

Variable	Mean	Standard deviation	Mean difference	Paired 't' value	Table value	Inference
Pre test	154.13	11.08	36.73	26.54	2.0452	Significant
Post test	117.4	11.68				

df=29

P<0.05

The mean pre test scores of SBP was 154.13(SD  $\pm$  11.08) and post test mean score was 117.4 (SD  $\pm$ 11.68) respectively. The post test mean score was lower than the pre test mean score. The mean difference was 36.73. The paired 't' value was 26.54 which was significant at P <0.05 level, which showed that Jacobson Progressive muscle relaxation techniques was effective in reducing SBP.

**TABLE 4b:** Comparison of mean and standard deviation of pre test and post test level of DBP among elderly in experimental group.

n=30

Variable	Mean	Standard deviation	Mean difference	Paired 't' value	Table value	Inference
Pre test	96.46	5.03	20.93	26.54	2.0452	Significant
Post test	75.53	8.04				

df=29 P<0.05\*

The mean pre test scores of DBP was 96.46(SD  $\pm$  5.03) and post test mean score was 75.53 (SD  $\pm$ 8.04) respectively. The post test mean score was lower than the pre test mean score. The mean difference was 20.93. The paired 't' value was 26.54 which was significant at P <0.05 level, which showed that Jacobson Progressive muscle relaxation techniques was effective in reducing DBP.

**TABLE 5:** Comparison of mean and standard deviation of pre test and post test level of stress among elderly in experimental group.

n=30

Variable	Mean	Standard deviation	Mean difference	Paired 't' value	Table value	Inference
Pre test	26.83	6.79	13.66	5.12	2.0452	Significant
Post test	13.17	5.32				

df=29

P<0.05

The mean pre test scores of level of stress was 26.83 (SD  $\pm$  6.79) and post test mean score was 13.17 (SD  $\pm$  13.17) respectively. The post test mean score was lower than the pre test mean score. The mean difference was 13.66. The paired 't' value was 5.12 which was significant at P <0.05 level, which showed that Jacobson Progressive muscle relaxation techniques was effective in reducing stress.

**SECTION : E COMPARE THE POST TEST LEVEL OF BLOOD PRESSURE AMONG ELDERLY IN EXPERIMENTAL AND CONTROL GROUP.**

**TABLE 6a:** Comparison of mean and standard deviation of post test level of SBP among elderly in experimental and control group.

$n_1=30, n_2=30$

Groups	Mean	Standard deviation	Mean difference	Independent 't' value	Table value	Inference
Experimental group	117.4	11.68	40.73	13.95	2.001	Significant
Control group	158.13	10.94				
df = 58			P<0.05			

The mean post test scores of SBP in experimental group was 117.4 (SD  $\pm$ 11.68) and control group score was 158.13(SD  $\pm$  10.94) respectively. The post test mean score in experimental group was lower than the post test mean score in control group. The mean difference was 40.73. The independent 't' value was 13.95 which was significant at P <0.05 level, which showed that Jacobson progressive muscle relaxation techniques was effective in reducing SBP.



**TABLE 6b:** Comparison of mean, standard deviation, post test level of DBP among elderly in experimental and control group.

$n_1=30, n_2=30$

Groups	Mean	Standard deviation	Mean difference	Independent 't' value	Table value	Inference
Experimental group	75.53	8.04	21.4	4.36	2.001	Significant
Control group	96.93	6.5				

df = 58

$P < 0.05$

The inferences made are

The mean post test scores of DBP in experimental group was 75.53(SD  $\pm 8.04$ ) and control group score was 96.93(SD  $\pm 6.5$ ) respectively. The post test mean score in experimental group was lower than the post test mean score in control group. The mean difference was 21.4. The independent 't' value was 4.36 which was significant at  $P < 0.05$  level, which showed that Jacobson progressive muscle relaxation techniques was effective in reducing DBP.

**SECTION : F      COMPARE THE POST TEST LEVEL OF BLOOD  
PRESSURE AMONG ELDERLY IN  
EXPERIMENTAL AND CONTROL GROUP.**

**TABLE : 7**    Comparison of mean, standard deviation,of post test level of stress among elderly in experimental and control group.

$n_1=30, n_2=30$

Groups	Mean	Standard deviation	Mean difference	Independent 't' value	Table	Inference
Experimental group	13.7	5.32	14.36	10.89	2.001	Significant
Control group	28.06	4.92				

df = 58

P<0.05

The inferences made are

The mean post test scores of stress in experimental group was 13.7 (SD  $\pm$ 5.32) and control group score was 28.06(SD  $\pm$  4.92) respectively. The post test mean score in experimental group was lower than the post test mean score in control group. The mean difference was 14.36. The independent't' value was 10.89 which was significant at P <0.05 level, which showed that Jacobson progressive muscle relaxation techniques was effective in reducing stress.

**SECTION G: CORRELATION BETWEEN POST TEST LEVEL OF  
BLOOD PRESSURE AND STRESS AMONG ELDERLY  
PEOPLE IN EXPERIMENTAL AND CONTROL GROUP**

**Table 7a:** Correlation of mean, standard deviation and 'r' value of post test level of stress and SBP among elderly in experimental group.

$n_1=30, n_2=30$

Variables	Mean	Standard	Correlation (r)
Stress	13.17	5.32	0.456
SBP	117.4	11.68	

df = 58

P<0.05\*

The inferences made are

The mean post test scores of stress was 13.17(SD  $\pm$ 5.32) and SBP was 117.4(SD  $\pm$  11.68) in experimental group respectively. The correlation between SBP and stress was 0.456.

**Table 7b:** Correlation of mean, standard deviation, and 'r' value of post test level of stress and DBP among elderly in experimental group.

$n_1=30, n_2=30$

Variables	Mean	Standard deviation	Correlation (r)
Stress	13.17	5.32	0.462
DBP	75.53	8.04	

df = 58

$P < 0.05$

The inferences made are

The mean post test scores of stress was 13.17(SD  $\pm$ 5.32) and DBP was 75.53(SD  $\pm$  8.04) in experimental group respectively. The correlation between SBP and stress was 0.462.

**Table 8a:** Correlation of mean, standard deviation, and 'r' value of post test level of stress and SBP among elderly in control group.

$n_1=30, n_2=30$

Variables	Mean	Standard deviation	Correlation (r)
Stress	28.06	4.69	0.168
SBP	158.13	10.94	

df = 58

$P < 0.05$

The mean post test scores of stress was 28.06 (SD  $\pm 4.69$ ) and SBP was 158.13 (SD  $\pm 10.94$ ) in experimental group respectively. There was no correlation found between SBP and stress.

**Table 8b:** Correlation of mean and standard deviation of post test level of stress and DBP among elderly in control group.

$n_1=30, n_2=30$

Variables	Mean	Standard deviation	Correlation (r)
Stress	28.06	4.69	0.140
DBP	96.93	6.5	

df = 58

P<0.05

The inferences made are

The mean post test scores of stress was 28.06 (SD  $\pm$  4.69) and DBP was 96.93(SD  $\pm$  6.5) in experimental group respectively. The was no correlation found between DBP and stress .

**SECTION : H      ASSOCIATION   BETWEEN   THE   POST   TEST  
LEVEL OF BLOOD PRESSURE SAMONG ELDERLY  
WITH      THEIR      SELECTED      DEMOGRAPHIC  
VARIABLES IN EXPERIMENTAL GROUP.**

**TABLE 9a:** Association between the post test level of SBP among elderly with their selected demographic variables.

n=30

S. No.	Demographic variables	Level SBP						$\chi^2$	Table value	Inference
		Normal		Pre-Hypertension		Grade -I				
		f	%	f	%	f	%			
1.	<b>Age</b>									
1.1	51 - 60 years	4	13.3%	-		-	-	3.68	12.89 df=6	NS
1.2	61 - 70 years	18	60%	3	10%	1	3.33%			
1.3	71 - 80 years	-	-	2	6.67%	2	6.67%			
2.	<b>Gender</b>									
2.1	Male	6	20%	2	6.67%	1	3.33%	0.06	7.82 df=3	NS
2.2	Female	15	50%	4	13.3%	2	6.67%			
3.	<b>Marital status</b>									
3.1	Married	2	6.67%	1	3.33%	-	-	3.92	16.92 df=9	NS
3.2	Single	1	3.33%	-	-	1	3.33%			
3.3	Widow\Widower	16	53.3%	4	13.3%	2	6.67%			
3.4	Separated	2	6.67%	1	3.33%	-	-			
4.	<b>Religion</b>									
4.1	Hindu	16	53.3%	2	6.67%	2	6.67%	4.03	12.89 df=6	NS
4.2	Christian	4	13.3%	3	10%	1	3.33%			
4.3	Muslim	1	3.3%	1	3.33%	-	-			

5.	<b>Educational status</b>									
5.1	Primary Education	9	30.0%	2	6.67%	1	3.33%			
5.2	Secondary Education	7	23.3%	-	-	-	-			
5.3	Under Graduates	1	3.33%	1	3.3%	-	-	2.94	21.03	
5.4	Post Graduates	-	-	-	-	-	-		df=12	NS
5.5	Illiterate	4	13.3%	3	10.0%	2	6.67%			
6.	<b>Body Mass Index</b>									
6.1	Under weight	2	6.67%	-	-	-	-			
6.2	Normal	10	33.3%	3	10.0%	-	-	10.25	12.59	
6.3	Over Weight	9	30.0%	3	10.0%	3	10.0%		df=6	NS
7.	<b>Dietary Pattern</b>									
7.1	Vegetarian	2	6.67%	-	-	-	-			
7.2	Mixed	19	63.3%	6	20.0%	3	10.0%	0.45	7.82	
									df=3	NS
8.	<b>History of Illness</b>									
8.1	Smoking	2	6.67%	-	-	-	-			
8.2	Alcoholism	2	6.67%	-	-	-	-			
8.3	Smoking\Alcoholism	13	43.3%	3	10.0%	1	3.33%			
8.4	Hereditary	1	3.33%	2	6.67%	-	-	6.4	21.03	
8.5	Others	3	10.0%	1	3.33%	2	.67%		df=12	NS
9.	<b>Recreational activity</b>									
9.1	Reading books	8	26.7%	-	-	-	-			
9.2	Watching TV	3	10.0%	4	13.3%	2	6.67%			
9.3	Gardening	8	26.7%	-	-	-	-	2.439	16.92	
9.4	Others	2	6.67%	2	6.67%	1	3.33%		df=9	NS

The inferences made are,

There was no significant association found between post test levels of SBP scores with their demographic variables..



**TABLE 9b:** Association between the post test level of DBP among elderly with their selected demographic variables.  
n=30

S. No	Demographic variables	Level DBP						$\chi^2$	Table value	Inference
		Normal		Pre-Hypertension		Grade -I				
		F	%	f	%	f	%			
1.	<b>Age</b>									
1.1	50 - 60 years	2	6.67%	1	3.33%	1	3.33%	10.66	12.89 df=6	NS
1.2	60 - 70 years	19	63.3%	3	10.0%	-	-			
1.3	70 - 80 years	-	-	2	6.67%	2	6.67%			
2.	<b>Gender</b>									
2.1	Male	6	20%	2	6.67%	1	3.33%	0.06	7.82 df=3	NS
2.2	Female	15	50%	4	13.3%	2	6.67%			
3.	<b>Marital status</b>									
3.1	Married	1	3.33%	2	6.67%	-	-	6.145	16.92 df=9	NS
3.2	Single	2	6.67%	-	-	-	-			
3.3	Widow\Widower	16	53.3%	4	13.3%	2	6.67%			
3.4	Separated	2	6.67%	-	-	1	3.33%			
4.	<b>Religion</b>									
4.1	Hindu	14	46.7%	4	13.3%	2	6.67%	3.43	12.89 df=6	NS
4.2	Christian	6	20.0%	2	6.67%	-	-			
4.3	Muslim	1	3.33%	-	-	1	3.33%			
5.	<b>Educational status</b>									
5.1	Primary Education	11	36.7%	1	3.33%	-	-	4.27	21.03 df=12	NS
5.2	Secondary Education	3	10.0%	3	10.0%	1	3.33%			
5.3	Under Graduates	2	6.67%	-	-	-	-			
5.4	Post Graduates	-	-	-	-	-	-			
5.5	Illiterate	5	16.7%	2	6.67%	2	6.67%			

6.	<b>Body Mass Index</b>	2	6.67%	-	-	-	-			
6.1	Under weight	11	36.7%	1	3.33%	1	3.33%	3.77	12.59	NS
6.2	Normal	8	26.7%	5	16.7%	2	6.67%		df=6	
6.3	Over Weight									
7.	<b>Dietary Pattern</b>									
7.1	Vegetarian	1	3.33%	1	3.33%	-	-		7.82	NS
7.2	Mixed	20	66.7%	5	16.7%	3	10.0%	1.088	df=3	
8.	<b>History of Illness</b>									
8.1	Smoking	2	6.67%	-	-	-	-			
8.2	Alcoholism	2	6.67%	-	-	-	-	1.593	21.03	NS
8.3	Smoking\Alcoholism	11	36.7%	4	13.3%	2	6.67%		df=12	
8.4	Hereditary	2	6.67%	1	3.33%	-	-			
8.5	Others	4	13.3%	1	3.33%	1	3.33%			
9.	<b>Recreational activity</b>									
9.1	Reading books	7	23.3%	1	3.33%	-	-		16.92	NS
9.2	Watching TV	6	20.0%	2	6.67%	1	3.33%	8.48	df=9	
9.3	Gardening	7	23.3%	1	3.33%	-	-			
9.4	Others	1	33.3%	2	6.67%	2	6.67%			

The inferences made are

There was no significant association found between post test levels of DBP scores with their demographic variables..

**SECTION : I      ASSOCIATION   BETWEEN   THE   POST   TEST  
LEVEL OF STRESS AMONG ELDERLY WITH THEIR SELECTED  
DEMOGRAPHIC VARIABLES IN EXPERIMENTAL GROUP.**

**TABLE 10:** Association between the post test level of stress among elderly with their selected demographic variables.

n=30

S. No	Demographic variables	Level of stress						$\chi^2$	Table value	Inference
		Low stress		Moderate stress		High perceived stress				
		f	%	f	%	F	%			
1.	<b>Age</b>			-				4.55	9.49 df = 4	NS
1.1	51-60 Years	4	13.3%	9	-	-	-			
1.2	61-70 Years	13	43.3%	2	30%	-	-			
1.3	71-80 Years	-	-		6.67%	2	6.67%			
2.	<b>Gender</b>			2				1.98	5.99 df=2	NS
2.1	<b>Male</b>	7	23.3%		6.67%	-	6.67%			
2.2	<b>Female</b>	10	33.3%	30		2	6.67%			
3.	<b>Marital status</b>							2.6	12.89 df = 6	NS
3.1	Married		-				-			
3.2	Single	2	6.67%	3	10%	-	-			
3.3	Widow/widower	13	43.3%	-	-	-	3.33%			
3.4	separated	2	6.67%	8	26.7%	1	3.33%			
4.	<b>Religion</b>							3.51	9.49 df = 4	NS
4.1	Hindu	13	43.3%	5	16.7%	2	6.67%			
4.2	Christian	3	10%	1	3.33%	-	-			
4.3	Muslim	1	3.33%	1	3.33%	-	-			

5	<b>Educational status</b>									
5.1	Primary Education	4	26.7%	4	33.3%	-	-	4.95	15.51 df=8	NS
5.2	Secondary Education	2	13.3%	3	10.0%	-	-			
5.3	Under Graduate	-	6.67%	-	-	-	-			
5.4	Post Graduate	3	-	-	-	-	-			
5.5	Illiterate	3	10.0%	4	13.3%	2	6.67%			
6	<b>Body Mass Index</b>									
6.1	Under weight	2	6.67%	-	-	-	-	5.78	9.49 df=4	NS
6.2	Normal	10	33.3%	3	10%	-	-			
6.3	Over Weight	5	16.7%	8	26.7%	2	6.67%			
7	<b>Dietary Pattern</b>									
7.1	Vegetarian	2	6.67%	-	-	-	-	0.77 df=2	NS	
7.2	Mixed	15	50%	11	36.7%	2	6.67%			
8	<b>History Of Illness</b>									
8.1	Smoking	-	-	2	6.67%	-	-	4.13	4.13 df=8	NS
8.2	Alcoholism	1	3.33%	1	3.33%	-	-			
8..3	Smoking / alcoholism	10	33.3%	5	16.7%	2	6.67%			
	Hereditary									
8.4	Others	1	3.33%	2	6.67%	-	-			
8.5		5	16.7%	1	3.33%	-	-			
9	<b>Recreational activity</b>									
9.1	Reading Books	5	16.7%	3	10.0%	-	-	3.696	12.89 df=6	NS
9.2	Watching TV	4	13.3%	3	10.0%	2	6.67%			
9.3	Gardening	5	16.7%	3	10.0%	-	-			
9.4	Others	3	10%	2	6.67%	-	-			

S-Significant

NS-Not Significant

The Inference made are

There was no statistically significant association found between post test levels of stress with their demographic variables.

## **CHAPTER – V**

### **DISCUSSION**

The discussion chapter deals with sample characteristics and objectives of the study. The aim of this present study was to assess the effectiveness of Jacobson Progressive Muscle relaxation techniques on blood pressure and stress among elderly people residing in selected old age home at Trichy.

#### **Distribution of sample characteristics:**

With respect to age, in experimental group majority of them 22 (73.33%) belonged to age group of 61-70 years, 4(13.33%) belonged to age group of 51-60 years, and 4(13.33%) belonged to age group of 71-80 years. In control group majority 20 (66.67%) belonged to age group of 61-70years, 5(16.67%) belonged to age group of 51-60 years, and 5(16.67%) belonged to 71-80 years.

With regard to gender, in experimental group majority of them 21 (70%) were female and rest 9 (30%) were male. In control group majority 23(76.67%) were female and 7(3.33%) were male.

With regard to marital status, in experimental group majority 22(73.33%) were widow/widower, 3(10%) were married, 3(10%) were separated and 2(6.67%) were single. In control group majority 19(63.33%) were widow/widower, 5(16.7%) were married, 4(13.33%) were single and 2(6.67%) were separated.

In related to Religion, in experimental group majority 20(66.67%) were Hindu, 8(26.67%) were Christian and 2(6.67%) were Muslim. In control group majority 17(56.67%) were Hindu, 10(33.33%) were Christian and 3(10%) were Muslim.

In accordance with educational status, in experimental group majority 12 (40%) had primary education, 9 (30%) had illiterate, 7(23.33%) had secondary education, and 2(6.67%) had under graduates. In control group majority 10 (33.33%) had primary education, 8(26.67%) had secondary education, 6(20%) had Illiterate, 3(10%) had under graduates and 3(10%) had post graduates.

Regarding body mass index, in experimental group majority 15(50%) had over weight, 13(43.33%) had normal weight and 2(6.67%) had underweight. In control group, majority 16(53.33%) had over weight,10(33.33%) had normal weight and 4(13.33%) had underweight.

With regard to Dietary pattern, In experimental group majority 28(93.33%) had mixed diet and 2(6.67%) had vegetarian. In control group majority 24(80%) had mixed diet and 6(20%) had vegetarian.

In related to history of illness, in experimental group, majority 17(56.67%) had occurred due to Smoking/alcoholism, 6(20%) had occurred due to others,3(10%) had occurred due to hereditary,2(6.67%) had occurred due to smoking and 2(6.67%) had occurred due to alcoholism. In control group, majority 19(63.33%) had occurred due to Smoking/alcoholism, 5(16.67%) had occurred due to smoking, 4(13.33%) had occurred due to others, and 2(6.67%) had occurred due to hereditary.

Regarding to recreational activity, in experimental group, majority 9(30%) were watching TV,8(26.67%) were reading books,8(26.67%) were gardening and 5(16.67%) were other activities. In control group, majority were reading books 10(33.33%),8(26.67%) were watching TV,6(20%) were gardening ,and 6(20%) were other activities.

**The findings of the study as per the objectives were discussed under the following headings.**

1. To assess the pre test and post test level of blood pressure and stress among elderly people in experimental and control group.
2. To compare the pre test and post test level of blood pressure and stress among elderly people in experimental and control group.
3. To compare the post test level of blood pressure and stress among elderly people in experimental and control group.
4. To correlate the post test level of blood pressure and stress among elderly people in experimental and control group
5. To find the association between the post test level of blood pressure and stress among elderly people with their selected demographic variables in experimental group.

**OBJECTIVE 1:To assess the pre test and post test level of blood pressure and stress among elderly people in experimental and control group.**

In pretest majority 19(63.33%) had grade I hypertension and 11 (36.67%) had grade II hypertension in the experimental group and 18(60%) had grade I hypertension and 12 (40%) had grade II hypertension in the control group. In post test majority 22(73.33%) had Normal level of Systolic Blood Pressure and 5 (16.67%) had pre hypertensive stage and 3(10%) had grade I hypertension in the experimental group and 13 (43.33%) had grade II hypertension in the control group.

In pre test majority 18(60%) had grade I hypertension and 12 (40%) had grade II hypertension in the experimental group and 19(63.3%) had grade I hypertension and 11(36.6%) had grade II hypertension in the control group. In post test majority 21(70%) had Normal level of diastolic blood pressure and 6

(20%) had pre hypertensive stage and 3(10%) had grade I hypertension in the experimental group and 17 (56.67%) had grade II hypertension and 13(43.33%) had grade II hypertension in the control group.

In pre test majority 17(56.67%) had moderate stress and 13 (43.33%) had high perceived stress in the experimental group and 19 (63.33%) had high perceived stress and 11(36.67%) had moderate stress in the control group. In post test majority 17(56.67%) had low stress, 11 (36.67%) had moderate stress and 2(6.67%) had high perceived in the experimental group and 16 (90%) had moderate stress and 14 (46.67%) had high perceived stress in the control group.

**OBJECTIVE: 2 Compare the pre test and post test level of blood pressure and stress among elderly people in experimental and control group**

**H<sub>1</sub>.. There will be significant difference between pre test and post test level of blood pressure and stress among elderly people**

The mean pre test scores of systolic blood pressure was 154.13(SD  $\pm$  11.08) and post test mean score was 117.4 (SD  $\pm$ 11.68) respectively. The post test mean score was lower than the pre test mean score. The mean difference was 36.73. The paired 't' value was 26.54 which was significant at P <0.05 level, which showed that Jacobson Progressive muscle relaxation techniques was effective in reducing systolic blood pressure.

The mean pre test scores of diastolic blood pressure was 96.46(SD  $\pm$  5.03) and post test mean score was 75.53 (SD  $\pm$ 8.04) respectively. The post test mean score was lower than the pre test mean score. The mean difference was 20.93. The paired 't' value was 26.54 which was significant at P <0.05 level, which showed that Jacobson Progressive muscle relaxation techniques was effective in reducing diastolic blood pressure.



The mean pre test scores of level of stress was 26.83 (SD  $\pm$  6.79) and post test mean score was 13.17 (SD  $\pm$  13.17) respectively in the experimental group. The post test mean score was lower than the pre test mean score. The mean difference was 13.66. The paired 't' value was 5.12 which was significant at  $P < 0.05$  level, which showed that Jacobson Progressive muscle relaxation techniques was effective in reducing stress.

The mean pre test scores of systolic blood pressure was 155.66(SD  $\pm$  10.72) and post test mean score was 158.13 (SD  $\pm$ 10.94) respectively. The post test mean score was lower than the pre test mean score. The mean difference was 2.47. The paired 't' value was 1.377 which was not significant at  $P < 0.05$  level.

The mean pre test scores of diastolic blood pressure was 95.93(SD  $\pm$  5.26) and post test mean score was 96.93 (SD  $\pm$ 6.5) respectively. The post test mean score was higher than the pre test mean score. The mean difference was 1.00. The paired 't' value was 0.52 which was not significant at  $P < 0.05$  level.

The mean pre test scores of level of stress was 28.5 (SD  $\pm$  4.69) and post test mean score was 28.06 (SD  $\pm$  4.92) in control group respectively. The post test mean score was lower than the pre test mean score. The mean difference was 0.44. The paired 't' value was 0.679 which was not significant at  $P < 0.05$  level

Hence the **H<sub>1</sub>** was accepted at the level of  $p < 0.05^*$ .

This study was supported by **Poongodi R., et al (2014)** conducted a study on effectiveness of Progressive muscle relaxation techniques on stress and blood pressure among elderly with Hypertension. The outcome shows variations in the study group which when compared with the control group at

$p < 0.001$  on stress, systolic blood pressure and  $p < 0.05$  on diastolic blood pressure. The result highlighted JPMR to be an effective method to decrease the stress and blood pressure among elderly with hypertension.

**OBJECTIVE: 3    Compare the post test level of blood pressure and stress among elderly people in experimental and control group.**

**H<sub>2</sub>:    There will be significant difference between post level of blood pressure and stress in experimental group and control group.**

The mean post test scores of systolic blood pressure in experimental group was 117.4(SD  $\pm$ 11.68) and control group score was 158.13(SD  $\pm$  10.94) respectively. The post test mean score in experimental group was lower than the post test mean score in control group. The mean difference was 40.73. The independent 't' value was 13.95 which was significant at  $P < 0.05$  level, which showed that Jacobson progressive muscle relaxation techniques was effective in reducing systolic blood pressure.

The mean post test scores of diastolic blood pressure in experimental group was 75.53(SD  $\pm$ 8.04) and control group score was 96.93(SD  $\pm$  6.5) respectively. The post test mean score in experimental group was lower than the post test mean score in control group. The mean difference was 21.4. The independent 't' value was 4.36 which was significant at  $P < 0.05$  level, which showed that Jacobson progressive muscle relaxation techniques was effective in reducing diastolic blood pressure.

The mean post test scores of stress in experimental group was 13.7(SD  $\pm$ 5.32) and control group score was 28.06(SD  $\pm$  4.92) respectively. The post test mean score in experimental group was lower than the post test mean score

in control group. The mean difference was 14.36. The independent 't' value was 10.89 which was significant at  $P < 0.05$  level, which showed that Jacobson progressive muscle relaxation techniques was effective in reducing stress

Hence the  $H_2$  was accepted at the level of  $p < 0.05^*$ .

This study results were consistent with the findings of Sheu et al. (2012) conducted a quasi-experimental study effectiveness of progressive muscle relaxation on blood pressure and psychological status among 40 hypertensive subjects in Taiwan. The result revealed that progressive muscle relaxation training has an immediate effect, reducing the systolic B.P 5.44 mm of Hg and diastolic B.P 3.48 mmHg after two weeks of training. After 4 weeks of progressive muscle relaxation further decrease in pulse rate 2.9 bpm, systolic B.P 5.1 mmHg and diastolic B.P 3.1 mmHg occurred.

**OBJECTIVES:4 Correlate the post test level of blood pressure and stress among elderly people in experimental and control group**

**$H_3$ : There will be a significant relationship between post test level of blood pressure and stress among elderly people in experimental and control group.**

The mean post test scores of systolic blood pressure was 117.4(SD  $\pm$  11.68) and stress was 13.17(SD  $\pm$  5.32) in experimental group respectively. The correlation between systolic blood pressure and stress was 0.456.

The mean post test scores diastolic blood pressure was 75.53(SD  $\pm$  8.04) and of stress was 13.17(SD  $\pm$ 5.32) in experimental group respectively. The correlation between systolic blood pressure and stress was 0.462. Hence the **H<sub>3</sub>** was accepted at the level of  $p < 0.05^*$ .

The mean post test scores of stress was 28.06 (SD  $\pm$ 4.69) and SBP was 158.13(SD  $\pm$  10.94) in experimental group respectively. The was no correlation found between SBP and stress.

The mean post test scores of stress was 28.06 (SD  $\pm$  4.69) and DBP was 96.93(SD  $\pm$  6.5) in experimental group respectively. The was no correlation found between DBP and stress.

**OBJECTIVE: 5 Association between the post test level of blood pressure and stress among elderly people with their selected demographic variables in experimental group.**

**H<sub>4</sub>: There will be a significant association between the post test level of blood pressure and stress among the elderly peoples with their selected demographic variables in experimental group.**

There was no significant association between post test level of blood pressure and stress among elderly people with their selected demographic variables in experimental group.

Hence the **H<sub>4</sub>** was not accepted at the level of  $p < 0.05^*$ .

## **CHAPTER – VI**

### **SUMMARY, CONCLUSION, IMPLICATION, RECOMMENDATIONS AND LIMITATIONS**

#### **SUMMARY OF THE STUDY**

The focus of the study was to assess the effectiveness of Jacobson Progressive Muscle relaxation techniques on blood pressure and stress among elderly people residing in selected old age home at Trichy.

The design of the study was quasi experimental non equivalent pre test and post test control group design. Conceptual frame work was based on Wiedenbach's helping art of clinical nursing theory (1969). Samples were selected by purposive sampling technique. 60 samples (30 for control group, 30 for experimental group) were selected for the study. Demographic variable was collected for all the 60 samples.

Blood pressure was assessed by using Sphygmomanometer and Stress was assessed by using Perceived stress scale. 30 minutes was spent for each sample. After the data collection Jacobson Progressive Muscle relaxation techniques was taught to the samples in the experimental group and made to practice it under the supervision and guidance of the investigator for 20 -30 minutes in the morning for 30 days. 31<sup>st</sup> day post test was conducted for both experimental and control group by using same scales. The collected data were analyzed and tabulated by using descriptive and inferential statistics.

## **MAJOR FINDINGS OF THE STUDY**

- Regarding to age group in experimental group majority 22 (73.33%) belonged to age group of 61-70 years. In control group majority 20 (66.67%) belonged to age group of 61-70years.
- Regarding to gender, in experimental group majority 21 (70%) belonged to gender female. In control group majority 23(76.67%) belonged to gender female .
- Regarding to marital status, in experimental group majority 22(73.33%). In control group majority 19(63.33%) were widow/widower.
- Regarding to Religion, in experimental group majority 20(66.67%) were Hindu. In control group majority 17(56.67 %) were Hindu.
- Regarding to education, in experimental group majority 12 (40%) had primary education. In control group majority 10 (33.33%) had primary education.
- Regarding to body mass index, in experimental group majority 15(50%) had over weight. In control group, majority 16(53.33%) had over weight.
- Regarding to Dietary pattern, in experimental group majority 28(93.33%) had mixed diet. In control group majority 24(80%) had mixed diet .
- Regarding to history of illness, in experimental group, majority 17(56.67%) had occurred due to smoking/alcoholism. In control group, majority 19(63.33%) had occurred due to smoking/alcoholism.
- Regarding to leisure time, in experimental group, majority 9(30%) were watching TV. In control group. In control group, majority 10(33.3%) were reading books.

- The data analysis depicts that, in pre test majority 17(56.67%) had moderate stress in the experimental group and 19 (63.33%) had high perceived stress in the control group. In post test majority 17(56.67%) had low stress in the experimental group and 16 (90%) had moderate stress in the control group.
- The data analysis depicts that, in pre test majority 19(63.33%) had grade I hypertension in the experimental group and 18(60%) had grade I hypertension in the control group. In post test majority 22(73.33%) had Normal level of systolic blood pressure in the experimental group and 13 (43.33%) had grade II hypertension in the control group.
- The data analysis depicts that, in pre test majority 18(60%) had grade I hypertension in the experimental group and 19(63.3%) had grade I hypertension in the control group. In post test majority 21(70%) had Normal level of diastolic blood pressure in the experimental group and 17 (56.67%) had grade II hypertension in the control group
- The mean pre test scores of level of stress was 26.83 (SD  $\pm$  6.79) and post test mean score was 13.17 (SD  $\pm$  13.17) respectively. The mean pre test scores of systolic blood pressure was 154.13(SD  $\pm$  11.08) and post test mean score was 117.4 (SD  $\pm$ 11.68) respectively. The mean pre test scores of diastolic blood pressure was 96.46(SD  $\pm$  5.03) and post test mean score was 75.53 (SD  $\pm$ 8.04) respectively.
- The mean post test scores of stress in experimental group was 13.7(SD  $\pm$ 5.32) and control group score was 28.06(SD  $\pm$  4.92) respectively. The mean post test scores of systolic blood pressure in experimental group was 117.4(SD  $\pm$ 11.68) and control group score was 158.13(SD  $\pm$  10.94) respectively. The mean post test scores of diastolic blood pressure in experimental group was 75.53(SD  $\pm$ 8.04) and control group score was 96.93(SD  $\pm$  6.5) respectively.

- There was no significant association between post test level of blood pressure and stress scores among alcoholic dependents with their selected demographic variables.

## **CONCLUSION**

The present study was conducted to evaluate the effectiveness of Progressive Muscle Relaxation Techniques on blood pressure and stress among elderly people residing in selected old age homes at Trichy. The study findings revealed that the independent 't' value of systolic and diastolic blood pressure was 13.95 and 4.36 which was significant at  $P < 0.05$  and independent 't' value of stress was 10.89 which was significant at  $P < 0.05$ . The results of the study concluded that Jacobson Progressive Muscle relaxation techniques were highly effective in reducing blood pressure and stress among elderly people.

## **IMPLICATIONS OF NURSING**

The findings of the study have certain implications for nursing service, education, administration, and nursing research.

### **Nursing service**

- Implementing the progressive muscle relaxation technique in regular practice is beneficial for elderly people to reduce blood pressure and stress in the old age homes.
- Nurses should take initiative in introducing the practice of progressive muscle relaxation technique in reducing blood pressure and stress in the old age homes.
- Continuing nursing education programme could be conducted to enhance nurse's knowledge and skill in providing competent care for those elderly who experience high blood pressure and stress due to various causes in the old age homes.



### **Nursing Education**

- Nurse educator can encourage the nursing students to conduct health education programme regarding benefits of muscle relaxation techniques to lead a stress free life among elderly peoples.
- Nurse educator can conduct the workshop on importance of complementary and alternative therapies to the students.
- Nurse educator can organize and encourage the nursing students to create awareness among elderly people regarding progressive muscle relaxation techniques.

### **Nursing Administration**

- A nurse administrator should take more responsibility to inculcate notions of health care among elderly.
- Nurse administrator should create awareness of blood pressure and stress among geriatric populations in different settings.
- Nurse administrator have planned to conduct mass health education among elderly peoples in different areas regarding benefits of relaxation techniques.

### **Nursing Research**

- Evidence based practice improves quality of nursing care.
- Research adds value to the comprehensive and holistic care.
- This study could form a base for further study in the field. Nurses are motivated and encouraged by the nurse educators and administrators to conduct research and take up a project that utilizes the various therapies to overcome blood pressure and stress.

## **Recommendations**

Recommendations for the future study include:

- This study can be replicated with large size
- A similar study can be conducted among other population so that the findings can be generalized.
- A comparative study can be conducted on the effectiveness between progressive muscle relaxation technique and other alternative therapies on blood pressure and stress among elderly with increased blood pressure.
- A similar study can be conducted to find the effectiveness of progressive muscle relaxation technique on different psychological problems among elderly with increased blood pressure.

## **Limitations**

- The study is limited to a period of four weeks.
- Only limited literatures and studies are obtained from the Indian context.
- The study is limited to institutionalized elderly peoples.
- The researcher faced difficulty in getting co-operation from the samples.

## **CONCLUSION**

Nurses have an important role of creating awareness about complementary therapy, if the elderly are given proper guidance regarding complementary measure such as PMR, we can make a significant impact in their lifestyle that will be helpful in maintaining normal blood pressure. Nurses are in the best position to coordinate. Practice of PMR is an effective and feasible method to decrease the blood pressure and stress among elderly.

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## **APPENDIX-I**

### **LETTER SEEKING PERMISSION TO CONDUCT STUDY**

From

G.Muthulakshmi  
II Year M.Sc. Nursing  
Indira College of nursing,  
Trichy.

Forwarded Through

Professor. Mrs.Sherene G. Edwin M.Sc. (N) (Ph.D.)  
Principal  
Indira College Of Nursing  
Trichy

To

Respected Sir/Madam

Sub: Requesting permission to conduct research in old age home

I am G.Muthulakshmi studying II year M.Sc. (Nursing) in Indira College of Nursing, as a part of M.Sc. nursing requirement under the fulfilment of Tamilnadu Dr.M.G.R Medical University, I am conducting a research on **A study to evaluate the effectiveness of Jacobson Progressive Muscle Relaxation Techniques on blood Pressure and stress among elderly people residing in Selected old age Homes at Trichy’.**

I have planned to do my research study in your esteemed home. So I kindly request you to give me permission to conduct study for which I remain grateful.

**Thanking You,**

**Yours faithfully**

**Muthulakshmi.G**

## **APPENDIX -II**

### **LETTER SEEKING EXPERT'S OPINION FOR CONTENT VALIDITY**

From

G.Muthulakshmi  
II Year M.Sc. Nursing  
Indira College of nursing,  
Trichy.

To

Through

The Principal  
Indira College Of Nursing  
Trichy

Respected Madam/sir,

Sub: Requisition for opinion and suggestion of experts for content validity of tool-reg

I am doing II year M.Sc. (Nursing) in Indira College of Nursing, Trichy under The Tamil Nadu Dr.M.G.R. Medical university, Guindy, Chennai. In order to fulfill my master degree as per the university requirement, I am supposed to complete a research project. I am doing study on the topic mentioned below

**‘An quasi experimental study to evaluate the effectiveness of Jacobson Progressive Muscle Relaxation Techniques on blood Pressure and stress among elderly people residing in Selected old age Homes at Trichy’**

May I request you to go through and validate the content of the tool. Please give your valuable opinion and suggestion regarding the tool which I have prepared

Thanking You,

Yours sincerely

Place: Trichy  
Date:

G.Muthulakshmi  
II Year M.Sc Nursing



APPENDIX-III  
LIST OF EXPERTS FOR CONTENT VALIDITY

1. Mrs. Thangapappa M.Sc. Nursing  
Professor  
Sacred heart College Of Nursing  
Madurai
2. Professor Mrs. Iramani M.Sc. nursing  
HOD of Medical Surgical Nursing  
OurLady of health College of Nursing  
Thanjavur
3. Professor Mrs. Selvakani pandiyan  
HOD of Medical Surgical Nursing  
SRM College of Nursing  
Kattankulathur
4. Dr. Mrs. Ananthavalli  
Psychologist  
Valliammal Institute  
Madurai
5. Dr. VelAravind., M.D, DM DNB  
Director  
Frontline Hospital  
Trichy
6. Dr. VeeraRagavan., MD (Medicine)  
Frontline Hospital  
Trichy

## **APPENDIX-**

### **CONTENT VALIDITY CERTIFICATE**

Hereby,I certify that I have validated the tool of **Ms.Muthulakshmi.G**, studying II year MSc nursing (Medical Surgical Nursing Speciality)at Indira College of Nursing,Trichy. Working on the dissertation of **“A study to evaluate the effectiveness of Jacobson Progressive Muscle Relaxation Techniques on blood Pressure and stress among elderly people residing in Selected old age homes at Trichy”**

Signature of the expert

Date:

Place:



## THE VALLIAMMAL INSTITUTION (TVI)

2/18A Upstairs, B.B. Road 2<sup>nd</sup> St., Pankajam Colony, Madurai-625 009.

☎ 98942 49630; 98430 40226 email: ananthibetsy@rediffmail.com

Reg. No. PCC/50/Aug.15/309

Date: 25/07/15



### Certificate Course in Basic Counselling Skills and Progressive Muscle Relaxation

*This is to certify that .....G. MUTHULAKSHMI..... has completed our  
**CERTIFICATE COURSE IN BASIC COUNSELLING SKILLS AND  
PROGRESSIVE MUSCLE RELAXATION** (24 hrs Part-time Education  
Programme designed and offered by experts) by effectively participating  
in theory & practical classes and successfully completing all the exercises.  
She has been placed in First Class*

*S. Jeyaprasam*



*Ananthavalli*  
25/07/15

Prof. Dr. S. Jeyaprasam M.Sc., M.A., M.A., Ph.D.,  
Director  
Rajarajan Institute of Science (RISE)

Dr. B. Ananthavalli M.Sc., M.A., M.Phil., Ph.D.,  
Director & Secretary  
The Valliammal Institution (TVI)

## **TOOL**

### **I: DEMOGRAPHIC DATA:**

#### 1. Age of Elderly

- 51-60 years
- 61-70 years
- 71-80 years

#### 2. Gender

- Male
- Female

#### 3. Marital Status

- Married
- Single
- Widow/Widower
- Separated

#### 4. Religion

- Hindu
- Christian
- Muslim

#### 5. Education

- Primary Education
- Secondary Education
- Under Graduate
- Post Graduate
- Illiterate

#### 6. Body Mass Index

- Underweight
- Normal
- Overweight

7. Dietary Pattern

- Vegetarian
- Mixed

8. History of Illness

- Smoking
- Alcoholism
- Smoking/Alcoholism
- Hereditary
- Others

9. Recreational activity

- Reading books
- Watching TV
- Gardening
- Other activities

**II: BLOOD PRESSURE CLASSIFICATION**

Blood Pressure	Normal	Pre-Hypertensive	Grade-I Hypertension	Grade-II Hypertension
SBP	< 120	120-139	140-159	160-179
DBP	< 80	80-89	90-99	100-109

### III: PERCEIVED STRESS SCALE

S. no	Questions	Never	Almost Never	Some times	Fairly often	Often
		0	1	2	3	4
1	In the last month, how often have you been upset because of something that happened unexpectedly					
2	In the last month, how often have you felt that you were unable to control the important things in your life					
3	In the last month how often felt nervous and stressed					
4	In the last month how often have you felt confident about your ability to handle your personal problems?					
5	In the last month how often have you felt that things were going your way					
6	In the last month how often have you found that you could not hope with all the things that you had to do?					
7	In the last month how often have you been able to control irritation in your life					
8	In the last month how often have you felt that you were on top of things					
9	In the last month how often have you been anger because of things that happen that were outside of your control					
10	In the last month how often have you felt difficulties were pilings up so high that use could not overcome them?					

- Never - 0
- Almost Never - 1
- Sometimes - 2
- Fairly Often -3
- Very Often -4

The score was interpreted as follows,

<b>Level of Stress</b>	<b>Score</b>	<b>Percentage</b>
Low Stress	0-13	32.5%
Moderate Stress	14-26	65%
High Perceived Stress	27-40	100%

## APPENDIX-H

### புகுதி- I

வினாத்தாள்

குறிப்பு:

கீழ்க்கண்டவற்றுள் சரியானவற்றை தேர்ந்தெடுத்து (✓)

குறிக்கவும் :-

1. வயது

- a. 51-60 வயதிற்குள்
- b. 61-70 வயதிற்குள்
- c. 71-80 வயதிற்குள்

2. பாலினம்

- a. ஆண்
- b. பெண்

3. திருமண நிலை

- a. மணமானவர்
- b. மணமாகாதவர்
- c. விதவை / விதவன்
- d. விவாகரத்தானவர்

4. இனம்

- a. இந்து
- b. கிறிஸ்தவம்
- c. முஸ்லீம்

5. கல்வித்தகுதி

- a. படிப்பறிவு இல்லாதவர்
- b. தொடக்கக்கல்வி
- c. இடைநிலைக்கல்வி
- d. மேல்நிலைக்கல்வி
- e. பட்டப்படிப்பு.



**6. அடித்தள வளர்ச்சிதை மாற்ற விகிதம்**

- a. குறைந்த எடை
- b. சுரியான எடை
- c. ஆதிக எடை
- d. உடல் பருமன்

**7. உணவு பழக்கவழக்கம்**

- a. சைவம்
- b. சைவம், அசைவம்

**8. நோய்க்கான காரணங்கள்**

- a. புகைபிடித்தல்
- b. மது அருந்துதல்
- c. புகைபிடித்தல் மற்றும் மதுஅருந்துதல்
- d. பரம்பரை
- e. மற்றவை
- f. எதுவுமில்லை

**9. பொழுதுபோக்கு**

- a. புத்தகம் படித்தல்
- b. தொலைக்காட்சி பார்த்தல்
- c. செடி வளர்த்தல்
- d. மற்றவை

**அறியப்பட்ட மன அழுத்த அளவுகோல்**

வ. எண்.	வினாக்கள்	இல்லை	எப்போதும் இல்லை	எப்போதாவது	சில நேரங்களில்	அடிக்கடி
		0	1	2	3	4
1	கடந்த மாதம் எதிர்பாராத நிகழ்ச்சியினால் நீ பெரிதும் பாதிக்கப்பட்டிருக்கிறாயா?					
2	கடந்த மாதம் உனக்கு ஏற்பட்ட முக்கிய நிகழ்ச்சிகளினால் அதிகம் பாதிக்கப்பட்டு மனதை உன்னால் அடக்கமுடியவில்லையா?					
3	கடந்த மாதம் எத்தனை முறை நரம்பு தளர்ச்சி ஏற்பட்டு பாதிக்கப்பட்டீர்கள்					
4	கடந்த மாதம் உன்னுடைய சில நிகழ்ச்சிகளை, நீ மிகுந்த மனத்தையத்தாலும், திறமையாலும் மேற்கொண்டாயா?					
5	கடந்த மாதம் நடந்த சில நிகழ்ச்சிகளை நீ உன் வழியிலேயே என்று செயல்படுத்த முடிந்ததா?					
6	கடந்த மாதம் அடிக்கடி உனக்கு நிகழ்ந்த நிகழ்ச்சிகளை சரியாக ஏற்றுக்கொள்ள முடியாமற் போனதா?					
7	கடந்த மாதம் உனக்கு ஏற்பட்ட வெறுக்கத்தக்க நிகழ்ச்சிகளை உன்னால் அடக்க முடிந்ததா?					
8	கடந்த மாதம் நீ பல காரியங்களில் சிறந்தவனாய் இருந்தாய் என ஏற்றுக் கொள்ள முடிகிறதா?					
9	கடந்த மாதம் உன்னை அறியாமலே ஏற்பட்ட பல நிகழ்ச்சிகளை நீ அடக்க முடியாமல் கோபப்பட்டதை உணர்கிறாயா?					
10	கடந்த மாதம் அடிக்கடி உனக்கு ஏற்பட்ட சில நிகழ்ச்சிகளால் பாதிக்கப்பட்டு அதனை அடக்க முடியாமல் இருந்தாயா?					

### SCORING KEY FOR LIKERT SCALE

#### SCORING KEY FOR NEGATIVE STATEMENT

Statement	Never	Almost Never	Sometimes	Fairly Often	Very Often
1					
2					
3					
6					
9					
10					

#### SCORING KEY FOR POSITIVE STATEMENT

Statement	Never	Almost Never	Sometimes	Fairly Often	Very Often
4					
5					
7					
8					

LIKERT SCALE TO ASSESS THE STRESS AMONG ELDERLY PEOPLE

S.no	Statement	Never	Almost never	Sometimes	Fairly often	Very often
1	1					
2	2					
3	3					
4	4					
5	5					
6	6					
7	7					
8	8					
9	9					
10	10					

**APPENDIX**  
**CERTIFICATE FOR ENGLISH EDITION**  
**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that the tool developed by Ms.Muthulakshmi.G II Year M.Sc. Nursing Student of Indira College of Nursing for dissertation **“A study to evaluate the effectiveness of Jacobson Progressive Muscle Relaxation Techniques on blood Pressure and stress among elderly people residing in Selected old age Homes at Trichy”** edited for English language appropriateness by **Mrs.Amutha M.A,B.Ed.,M.Phil.,**

**Signature**

**APPENDIX**  
**CERTIFICATE FOR TAMIL EDITION**  
**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that the tool developed by Ms.Muthulakshmi.G II Year M.Sc. Nursing Student of Indira College of Nursing for dissertation “**A study to evaluate the effectiveness of Jacobson Progressive Muscle Relaxation Techniques on blood Pressure and stress among elderly people residing in Selected old age Homes at Trichy**” edited for Tamil language appropriateness by **Mrs. Hema M.A,M.Phil.,**

**Signature**



